

Physician well-being: prevalence of burnout and associated risk factors in a tertiary hospital, Riyadh, Saudi Arabia

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Ann Saudi Med 2013; 33(5): 451-456

DOI: 10.5144/0256-4947.2013.451

BACKGROUND AND OBJECTIVES: This study is to determine level and factors associated with burnout among physicians in a tertiary hospital in Saudi Arabia.

DESIGN AND SETTINGS: This is a cross-sectional study, conducted at the King Fahad National Guard Hospital at in King Abdulaziz Medical City between October 2010 and November 2010.

METHODS: The Maslach Burnout Inventory questionnaire was used to measure burnout. Socio-demographic-, specialty-, and work-related characteristics were added to explore factors associated with burnout.

RESULTS: The study included 348 participants; 252 (72%) were males, 189 (54%) were consultants, and 159 (46%) were residents. The mean (SD) age was 35 (9.8) years. The burnout prevalence was 243/348 (70%); 136 (56%) of the 243 were residents and 107 (44%) were consultants. Age, female gender, marital status, number of years in practice, sleep deprivation, presence of back pain, and a negative effect of practice on family life were associated with burnout in the univariate logistic regression analysis. The factors independently associated with burnout in the final multivariate model were as follows: suffering from back pain (odds ratio [OR]=2.1, 95%CI 1.2-3.8, $P=.01$), sleep deprivation (OR=2.2, 95%CI 1.2-3.8, $P=.009$), being a resident physician/surgeon (OR=4.9, 95%CI 1.7-14.2, $P=.004$), and negative effect of practice on family life (OR=2.1, 95%CI 1.1-3.9, $P=.02$).

CONCLUSION: In this study, the prevalence of burnout was found to be higher than estimates documented in most other studies. Reported risk factors should be addressed to decrease the prevalence and consequences of burnout.

The term “burnout” was invented by Herbert Freudenberger in 1970 to describe the consequences of occupational severe emotional stress experienced by certain professionals, such as medical doctors, nurses, and police personnel, dedicating themselves for the well-being of others with a consequence of succumbing to a state of burnout.¹

Although there is no precise and clear definition for the term burnout up to date; however, the most adopted approach to understand and quantify this phenomenon is the Maslach Burnout Inventory (MBI), which was developed by Maslach in 1976.²⁻⁴ The MBI is a self-assessment survey instrument that consists of 22 questionnaire items. This instrument defines and quantifies

burnout as a 3-dimensional syndrome of emotional exhaustion (feeling of emotionally drained and tired or fatigued by contact with other people), depersonalization (negative feelings and cynical attitudes toward the recipients of one’s service or care), and reduced accomplishment (tendency to evaluate one’s work negatively). Many factors associated with burnout, such as age, sex, working hours, job dissatisfaction, marital status, and work-home interference, have been identified in previous studies.⁵⁻⁷

Burnout has potential serious consequences for employees, employers, clients, and institutions. These include mental and physical health illness, occupational conflicts, absenteeism, decreased job performance, re-

duced job commitment, and sub-optimal patient care practices that may eventually compel a physician to leave the field of medicine.^{5,7,8}

This syndrome has been investigated in a wide variety of different medical specialties in different countries.⁹⁻²¹ Despite the deleterious consequences of this syndrome, there are limited published data among Saudi Arabian physicians and surgeons. This study was conducted to determine the prevalence of burnout and associated risk factors among consultants and residents in different specialties working in the same tertiary hospital work environment in Riyadh, Saudi Arabia.

METHODS

All consultants and residents who were undergoing training in surgery, OB/GYN, anesthesia, emergency medicine, internal medicine, family medicine, pediatrics, cardiology, psychiatry, and intensive care in King Abdulaziz Medical City, Riyadh, Saudi Arabia, were approached to participate in the study. We excluded physicians/surgeons who were not practicing clinical work and residents who were rotating in other hospitals during the study.

We used the English version of the MBI to measure the prevalence of burnout. The MBI has been validated widely used as a reliable instrument to measure burnout in different medical specialties.⁹⁻¹³ It consists of 22 items, which are used to measure 3 domains of burnout. These domains are as follows: emotional exhaustion, 9 items (feeling emotionally drained, tired, or fatigued by one's contact with other people); depersonalization, 5 items (tendency to view the others as objects rather than as feeling persons); and personal accomplishment, 8 items (the degree to which a person perceives doing well on worthwhile tasks).² The participant answers these items using a 7-point scale ranging from 0 (never) to 6 (every day). However, a study suggested that the most 2 important items from these 22 items that can be indicative of burnout are (1) "I feel burned out from my work" and (2) "I have become more callous toward people since I took this job".²²

The second part of the questionnaire was added to assess the associated risk factors of burnout at our institute. These included demographic data (age, gender, marital status, number of children, current positions, and nationality), specialty-related questions (specialty name, board name, number of fellowships, and years of experience), and work-related questions (number of on call days/month, number of clinics/week, number of patients/clinic, number of vacations days/year, number of operations/week, impact of specialty on family life, job income satisfaction, working in the private sector,

and presence of back pain).

This questionnaire was distributed by the secretary in each department and by the principal investigator to improve the response rate. Residents were targeted during their education activities. For the purpose of this study, burnout was defined as the presence of one or more of the following: (1) high score (27 or over) in emotional exhaustion; (2) high score in depersonalization (13 or over); and (3) low score in personal accomplishment (0-31). All participants with a high score in 1 or more of these 3 domains were included in the burnout group. The rest were included as a comparison group. This survey was conducted between October and November 2010 after approval by the Ethics Committee of the King Abdullah International Medical Research Center. All respondents were given information regarding the purpose of the study.

The sample size was estimated at the 95% confidence level with an expected proportion of 0.5 and an acceptable margin of error of 0.05. The minimum required sample size was 341.

Burnout was modeled as a binary variable (burnout or no burnout) using the conventional and predetermined cutoffs defined earlier. As such, each participant was allocated in 1 of the 2 mutually exclusive and exhaustive categories of burnout status. Categorical variables were compared using the chi-square test. Student t test was used for numerical factors (age, number of children, number of fellowships, clinics/week, hours on call/month, operating days/week, and vacation days/year). Logistic regression models were fitted to estimate the effect size of the risk factors by calculating odd ratios (ORs) with 95% confidence intervals. All variables significant in the univariate analysis were included in a final multivariate model fitted to obtain adjusted estimates of the ORs and to identify risk factors that were independently associated with burnout. All tests were 2 sided, and a *P* value < .05 was considered significant. The statistical analysis was performed using SPSS software version 16 (SPSS Inc. Chicago, USA).

RESULTS

A total of 348 questionnaires were collected. The overall response rate was 74%. The mean age (SD) of respondents was 35 (9.8) years; 72% were male, 87% of Saudi nationality, 74% married, 54% consultants, and 46% were residents. More than 50% of participants were in practice for ≤5 years, 10% worked concurrently in the private sector, and 58% were satisfied with their income. Approximately, 73% indicated that their family life were negatively affected by their current job; 86% suffered from sleep deprivation (≤6 hours/day), and

65% had back pain (Table 1).

The overall burnout prevalence was 243/348 (70%). The participants in the burnout group were significantly younger ($P<.001$), had a significantly increased proportion of individuals with female sex ($P=.02$), had an unmarried status ($P=.003$), were in resident employment category ($P<.001$), had a lower total number of years in practice ($P<.001$), were individuals whose current job negatively affected their family life ($P<.001$), and were suffering from sleep deprivation ($P<.001$) or back pain ($P<.001$) compared with those in the comparison group (Table 1).

The response rate did not statistically differ by consultants or residents across specialties (ranging from 65% to 100%). The burnout prevalence across specialties was not statistically different ($P=.09$) (Table 2). However, the prevalence was highest ($\geq 70\%$) among OB/GYN, surgery, family medicine, anesthesia, intensive care, internal medicine, and pediatric specialists and lowest (39%) among cardiology specialists. In addition, the prevalence of burnout syndrome was significantly higher in residents (136/159 [86%]) compared with consultants (107/189 [57%]), $P<.001$.

Of all respondents, 188 (54%) were found to be in high emotional status, 121 (35%) in high depersonalized status, and 119 (33%) in low personal accomplishment status (Table 3).

In the univariate logistic regression analysis, burnout was significantly associated with female gender, younger age, unmarried, resident physician/surgeon, and a negative effect of practice on family life. However, in the final multiple logistic regression analysis, the factors independently associated with burnout were as follows: suffering from back pain (odds ratio [OR]=2.1, 95% CI 1.2-3.8, $P=.01$), having sleep deprivation (OR=2.2, 95% CI 1.2-3.8, $P=.009$), being a resident physician/surgeon (OR=4.9, 95% CI 1.7-14.2, $P=.004$), and having a negative effect of practice on the family life (OR=2.1, 95% CI 1.1-3.9, $P=.02$) (Table 4).

DISCUSSION

The findings of this study indicate that the burnout syndrome is highly prevalent among physicians across all specialty categories working in this large tertiary health care institution in Riyadh, Saudi Arabia. In addition the study reveals that physicians are in an unacceptable state of measurable parameters of burnout. The prevailing working conditions might lead to negative mental and physical health conditions with far-reaching consequences to the quality and efficacy of patient care. These findings have obvious public health implications that needed to be addressed.

Table 1. Characteristics of participants stratified by burnout status.

Characteristics	Burnout (n=243) n (%)	Non-burnout (n=105) n (%)	P value
Age, mean (SD)	33 (9)	39 (11)	<.001
Sex			
Female	76 (31)	20 (19)	.02
Male	167 (69)	85 (81)	
Nationality			
Saudi	217 (89)	86 (82)	.06
Non-Saudi	26 (11)	19 (18)	
Marital status			
Not married	74 (30)	16 (15)	.003
Married	169 (70)	89 (85)	
Employment			
Consultant	107 (44)	82 (86)	<.001
Resident	136 (56)	23 (14)	
Family life affected^a			
Yes	193 (79)	60 (57)	<.001
Income satisfaction			
Yes	135 (56)	68 (65)	.13
Working in private sector			
Yes	23 (9)	13 (12)	.41
Years in practice			
≤ 5 y	156 (65)	33 (31)	<.001
6-10 y	30 (12)	16 (15)	
11-15 y	20 (8)	21 (20)	
≥ 16 y	37 (15)	35 (34)	
Sleep deprivation (<6 h/d)			
Yes	179 (74)	57 (54)	<.001
Back pain			
Yes	176 (72)	51 (48)	<.001

^aPerception of respondent whether his current job affected his family life.

In this cohort, this syndrome was disproportionately affecting participants of young age, female sex, unmarried marital status, participants at initial stage of medical practice, participants of resident physician/surgeon employment category and individuals whose current

Table 2. Prevalence of burnout in different specialties.

Specialty	Total	Burnout n (%)
OB/GYN	36	28 (78)
Surgery	76	58 (76)
Family medicine	38	29 (76)
Anesthesia	17	12 (70)
Intensive care	10	7 (70)
Internal medicine	66	46 (70)
Pediatric	57	40 (70)
Emergency medicine	25	13 (52)
Psychiatry	10	5 (50)
Cardiology	13	5 (39)
Total	348	243 (70)

rates reported in most studies conducted in Western countries, but it was similar to the 50.7% rate reported by another study conducted in the western region of Saudi Arabia.¹⁶ However, that study was based on a limited sample of orthopedic consultants. In the other two studies conducted in Saudi Arabia among Saudi nurses²³ and primary care physicians,²⁴ high emotional exhaustion rates were 46% and 53%, respectively. In Western countries, Campbell and colleagues found that 32% of the individuals they studied had a high level of emotional exhaustion.¹⁵ Bertges et al reported a prevalence of 38% among transplant surgeons.¹³ Elit et al reported a prevalence of 34% in a study including gynecologic oncologists.¹⁷ Another study found that 38% of OB/GYN residents reported high levels of emotional exhaustion.²⁰

Alarming, the most affected physicians with the burnout syndrome in this study were resident physician/surgeon and those at the early stage of their medical career. The prevalence of burnout was higher among residents than consultants (86% and 57%, respectively). Ozyurt et al reported that the mean scores of emotional exhaustion and depersonalization were significantly higher among physicians <29 years of age than among those who were older.⁵ In addition, internal medicine residents reported significantly higher (35%) depersonalization than specialists (9%).¹⁰ In surgery specialty, Campbell et al reported that younger surgeons are more susceptible to burnout than older surgeons ($P < .01$).¹⁵ Our study did not correlate the quality of care with the burnout syndrome, but studies conducted elsewhere demonstrated increased patient dissatisfaction and lower compliance with care when patients were treated by physicians exhibiting burnout syndrome symptoms. In a study that linked burnout to a measure of the quality of care, Shanafelt et al showed that the burnout syndrome among resident physicians is associated with increased self-reported suboptimal patient care practices.¹¹ Burnout residents more often reported suboptimal patient care practices than residents without burnout (53% vs 21%, respectively). These findings suggest that increased attention to improving the working condi-

Table 3. Prevalence of burnout based on burnout subscales.

Burnout subscales	Low ^a n (%)	Moderate ^b n (%)	High ^c n (%)
Emotional exhaustion (EE)	56 (16%)	104 (30%)	188 (54%)
Depersonalization (DP)	152 (44%)	75 (22%)	121 (35%)
Personal accomplishment (PA)	119 (34%)	113 (33%)	116 (33%)

^aEE High: 27 or over, EE Moderate:17-26, EE low:0-16. ^bDP High:13 or over, DP Moderate:7-12, DP Low:0-6. ^cPA High:0-31, Moderate:32-38, Low:39 or over. (In the opposite direction from EE and DP)

job negatively affected their family life, and individuals who were suffering from sleep deprivation or back pain. The latter four factors were independently associated with increased likelihood of burnout. However, it is difficult to ascertain temporality of the latter two factors due to the fact that they may be consequences rather than predisposing factors for burnout.

Across all burnout subscales, the highest scores were observed in the emotional exhaustion subscale (54%) followed by depersonalization (35%) and low sense of personal accomplishment (33%). The 54% rate of emotional exhaustion calculated in this study is higher than

tions of residents is warranted and that further studies of possible interventions are critical.

This study has limitations. This study was carried out in a single tertiary institution. As such it is not possible to generalize our findings to physicians working elsewhere in the Kingdom. These should encourage a multicenter study. However, the overall and subscale burnout rates calculated in this study concur with those reported in previous local studies. In addition, physicians in this institution work in a setting typical for tertiary health care facilities in Saudi Arabia. Despite the fact that we met our target sample, some physicians declined to participate in our study. We cannot exclude the possibility that those who did not participate experienced a different degree of burnout than responders. Finally, this study is limited by its cross-sectional design that typically limits confirmation of temporality and causality of the factors we explored as explanatory factors of the burnout syndrome.

Our study has several strengths. First, we had an excellent survey response rate. Second, to our knowledge it is the only study that determined the prevalence of burnout among physicians/surgeons in different specialties, contrary to other studies focusing on a single specialty. Third, we explored many risk factors that have been reported elsewhere in the published reports.

In conclusion, in this study, the prevalence of burnout among the resident and consultant physicians/surgeons in a major tertiary Saudi hospital was found to be higher than that reported by most other studies. Several factors associated with burnout have been identified. These risk factors should be studied further to better understand how best to address the prevalence of burnout and avoid its consequences.

Acknowledgments

The authors would like to thank all the participants, Dr.Aamir Omair, Mayssa Saadeh and Manal Al-Humdan for their assistance.

Table 4. Univariate and multivariate regression analyses of risk factors.

Characteristic	Univariate analysis		Multivariate analysis	
	OR (95%CI)	P value	OR (95%CI)	P value
Age	0.94 (0.92-0.97)	<.001	1.0 (0.9-1.0)	.2
Gender				
Female	1.9 (1.1-3.4)	.019	1.3 (0.6-2.5)	.5
Male	1		1	
Marital status				
Married	0.4 (0.2-0.8)	.006	1.2 (0.6-3.0)	.6
Unmarried	1		1	
Years in practice		<.001		.5
Years in practice (≤5)	4.5 (2.5-8.1)	<.001	2.2 (0.6-7.6)	.2
Years in practice (6-10)	1.8 (0.8-3.8)	.14	2.0 (0.7-5.6)	.2
Years in practice (11-15)	0.5 (0.4-1.9)	.8	1.6 (0.6-4.3)	.4
Years in practice (≥16)	1		1	
Employment				
Residents	4.5 (2.6-7.6)	<.001	4.9 (1.7-14.2)	.004
Consultants	1		1	
Sleep deprivation				
Yes	2.3 (1.4-3.8)	<.001	2.2 (1.2-3.8)	.009
No	1		1	
Family life affected				
Yes	2.8 (1.8-4.8)	<.001	2.1 (1.1-3.9)	.02
No	1		1	
Back pain				
Yes	2.7 (1.7-4.4)	<.001	2.1 (1.2-3.8)	.01
No	1		1	

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