RESEARCH ARTICLE

PREVALENCE OF BURNOUT AMONGST PHYSICIANS WORKING IN PRIMARY CARE IN RIYADH MILITARY HOSPITAL, SAUDI ARABIA

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ABSTRACT

Background: Burnout is associated with decreased job performance and low career satisfaction. It has a special significance in health care, where staff experience both psychological–emotional and physical stress.

Aims & Objective: This study was conducted to determine the prevalence of burnout, and its associated factors, amongst primary care doctors (PHC) in Riyadh Military Hospital RMH.

Material and Methods: A cross-sectional survey of PHC was conducted using a custom-designed and validated questionnaire which incorporated the Maslach Burnout Inventory Human Services Survey (MBI-HSS) as well as questions about demographic factors, working experience, health, lifestyle and job satisfaction. MBI-HSS scores were analyzed in the three dimensions of emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA).

Results: Almost 200 questionnaires were distributed, and 144 were returned to give a response rate of 72%. In terms of burnout, 53.5% of respondents scored high for EE burnout, 38.9% for DP and 28.5% for PA, with 2.78% scoring high burnout in all three dimensions. Just over one-quarter of doctors did not score high for burnout in any dimension. High burnout was found to be strongly associated with several of the variables under study, especially low job satisfaction, expressed intention to change job, tobacco consumption and use of psychotropic medication, younger age, recent graduation, married and board qualified doctors.

Conclusion: Burnout seems to be a common problem in PHC doctors in RMH and is associated with personal and workload indicators. Recommendations for improving employment conditions of PHC physicians and future research is needed to explore the problem in depth, develop models to describe the phenomenon and to identify causative factors and effective intervention strategies.

KEY-WORDS: Burnout; Denationalization; Personal Accomplishment; Primary Care Physicians

Introduction

Job-related 'burn out' or 'burnout' has been identified as an occupational hazard for various professionals involved in people-oriented services. Burnout is a syndrome, with reported symptoms including exhaustion, frustration, anger, and a feeling of ineffectiveness and/or failure. An important element of the syndrome is a negative impact on job performance.[1]

Three dimensions of the syndrome are described: emotional exhaustion (EE) is the depletion of one's emotional resources and reflects the basic stress dimension of burnout; depersonalization (DP) usually develops due to the effect of EE and exhibits features of detachment and, eventually, dehumanization; and reduced personal accomplishment (PA) reflects reduced feelings of competence and productivity at work, which are linked to depression.[2]

Factors related to burnout amongst professionals, including doctors, include situational factors [organizational commitment, absence of job resources (e.g. inadequate pay), overload, role conflict and ambiguity, poor career progression and lack of feedback] and individual characteristics (demographic variables, personality characteristics, job satisfaction, job withdrawal and lack of social support), with the effect of the situational factors being stronger.[3,4]

In 2008, burnout in European family doctors: the EGPRN study done by multiple authors from 12 country with sample size of 1393 showed high levels of burnout apparently affecting two-thirds of respondents in the study. In all, 43% of respondents reported high levels of EE, 35% DP and 32% low feelings of PA. There was

considerable variation between countries, with doctors from Southern European countries reporting lower rates of EE but also lower feelings of PA.[5]

Another study conducted in Yemen in 2010 by Sami Al-Dubai with a sample size of 563, showed a high prevalence of burnout levels especially emotional exhaustion 63.2% among doctors and 11.7% in all dimensions.[6] In Jeddah, Saudi Arabia there were two studies, the first was done in 2003 with the main objective of estimating the prevalence of burnout among both family medicine residents and practicing family physicians in the Joint Program of Family and Community medicine in Jeddah with a sample size of 88 physicians ; it showed that the prevalence of burnout among family medicine residents and postgraduate physicians was 14.8% and 26.1 % respectively for burnout and modified burnout. Sixty three percent of physicians reported high levels of emotional exhaustion. Lack of family support, lack of supervisor support, and lack of recreational activities were significantly related to burnout. The second study was done in 2008 and the main objective was to measure the prevalence of burnout syndrome among Saudi female physicians only working in the ministry of health hospitals in Jeddah city with a sample size of 373 physicians. The prevalence rate of burnout was 7.3%. About 66.7% of the female physicians were found to be in a state of high emotional exhaustion, 47.8% were in a state of depersonalization and 33.3% had a low state of personal accomplishment.[7,8]

Although burnout has been described in health professionals and has been reported to be common in primary care doctors, there are few published studies internationally and locally addressing it. Information about current level of burnout in PHC doctors working here in Riyadh city is lacking.

This study is an attempt to address this important issue as related to PHC physicians in RMH in Riyadh, Saudi Arabia. It aimed at determination of the prevalence rate of burnout, and its associated factors, amongst primary care doctors (PHC) in Riyadh Military Hospital RMH.

Materials and Methods

This is a cross-sectional study which conducted at RMH primary care centers. In RMH PHC there are 16 centers distributed in Riyadh city serving military staff and their families. Ranging from 2-3 doctors in one center to more than 100 doctors in one big center with service doctors (senior house officers [SHO], residents, registrars, senior registrars and consultants) and a 4 years training program leading to a board certificate in family medicine. Some centers provide a variety of services, like general clinics, chronic disease clinic (CDC), well baby and well women clinic.

A total of 200 questionnaires were distributed to all available doctors in all centers in April 2010. Doctors may have failed to return a questionnaire for a variety of reasons; such as work obligations, being on leave or personal reasons.

A literature search was performed to identify instruments and tools which measure burnout and to identify factors associated with high levels of burnout. The questionnaire instrument was developed on the basis of such literature. It was pilot tested in 2000, the results being published in 2002.[9]

The final validated questionnaire instrument was used, which is composed of two parts: a questionnaire form including questions regarding age, gender, marital status, years since qualification as a doctor, years in current workplace, earning, working conditions (working hours per week, patients per week, night shifts, weekends worked), intention of changing job, sick leave utilization, sleep patterns and smoking as well as Maslach Burnout Inventory—Human Services Survey (MBIHSS) developed by Maslach and Jackson in the early 1980s .

The scale has demonstrated the strongest results and continues to be used most widely by researchers. It has been previously validated in a number of health care populations.[10,11] It comprises 22 seven-point questions on frequency of symptoms (ranging from '0 = never' to '6 = every day'). The three dimensions are each measured by subscales: EE on a subscale with nine items and a maximum score of 54, DP on a

five-item subscale with a maximum score of 30 and a decreased sense of PA (inverse scale, low scores indicate high burnout) on a subscale with eight items and a maximum score of 48.[12] In our study the questionnaire was completed in English, and no translation to Arabic was necessary.

Data was fed into SPSS for Windows for analysis with the aid of the statistician.[13] Each form was coded and entered to the computer for statistical analysis. The two-way ANOVA F-test was used to compare the differences in scores between subclasses of burnout, and Student's t-test was used to assess differences between variables ($p < 0.05$ was considered to be statistically significant). Coding of burnout outcome variables: MBI-HSS scores were output in the three dimensions of burnout and were then transformed into categorical variables for high, moderate and low burnout in the dimensions of EE, DP and PA as recommended by Maslach using the cut-off values applicable for doctors, as listed below.12 However, the burnout outcome variables were coded into high, moderate and low burnout for the statistical analyses: EE: low burnout < 14, moderate burnout 14–26, high burnout > 26. DP: low burnout < 6, moderate burnout 6–9, high burnout > 9. PA: high burnout < 34, moderate burnout 34–39, low burnout > 39 (inverse scale).

The ethical review board in hospital was contacted and agreement and approval were taken. Verbal consent to take part in the study was obtained from all participants and they were assured about the confidentiality of the data.

Results

A total of 144 completed questionnaires were returned from more than 200 sent, giving a response rate of approximately 72%.

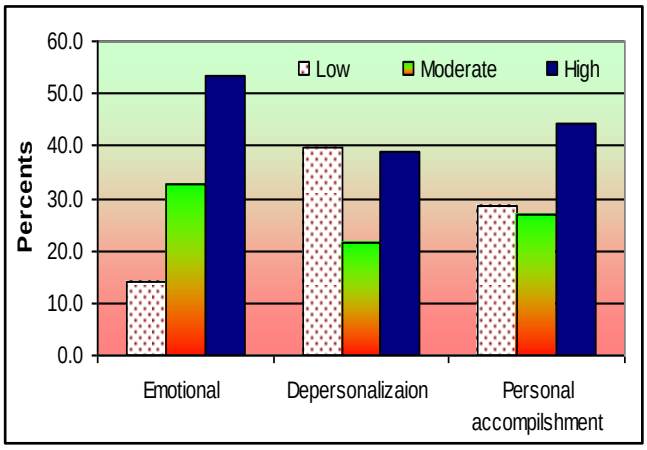
Table (1) gives the frequency distribution of the categorical variables. The 144 respondents (88 males, 61.1% and 56 females, 38.9%) had a mean age of 37.08 years (SD ± 8.48 years) the age ranged from 25 to 62 years and had graduated 10.63 years (SD ± 8.39 years) previously to filling in the questionnaire, (47.2%) were Saudi, (15.3%) were single and (84.0%) were married.

Table-1: Respondent Characteristics (n = 144) as Measured by the Questionnaire Instrument

Characteristics		N
Age	Means ± SD	37.08 ± 8.48
	Min/Max	25/62
Gender (%)	Male	88 (61.1)
	Female	56 (38.9)
Nationality (%)	Saudi	68 (47.2)
	Non-Saudi	76 (52.8)
Marital Status	Married	121 (84.0)
	Single	22 (15.3)
	Widowed	1 (0.7)
No. of Children	Means ± SD	2.45 ± 1.56
	Min/Max	0/8
Years since Qualification	Means ± SD	4.63 ± 3.86
	Min/Max	1/19
Job Title	Consultant	7 (4.9)
	Senior registrar	23 (16.0)
	Registrar	58 (40.3)
	SHO	15 (10.4)
	Resident	41 (28.5)
Resident Rank	R1	9 (22.0)
	R2	7 (17.1)
	R3	12 (29.3)
	R4	13 (31.7)
Board qualified	No	86 (59.7)
	Yes	58 (40.3)
Income	<15000	48 (33.3)
	15000-20000	50 (34.7)
	20000-25000	28 (19.4)
	25000-30000	14 (9.7)
	30000-35000	3 (2.1)
	>35000	1 (0.7)
How many patient do you see per week	<80	32 (22.2)
	80-100	21 (14.6)
	100-120	32 (22.2)
	>120	59 (41.0)
How many hour do you work per week	<44	48 (33.3)
	44	74 (51.4)
	>44	22 (15.3)
How many hour do you sleep per day	<4	1 (0.7)
	4-6	56 (38.9)
	6-8	82 (56.9)
	>8	5 (3.5)
Do you do night shift	No	114 (79.2)
	Yes	30 (20.8)
Do you work during week end	No	115 (79.9)
	Yes	29 (20.1)
How many days were you off work on sick leave	0-7	132 (91.7)
	8-14	8 (5.6)
	15-30	4 (2.8)
Have you seriously considered changing your job at least once over	No	84 (58.3)
	Yes	40 (27.8)
	Undecided	20 (13.9)
How satisfied are you with your current job	0	5 (3.5)
	1	9 (6.3)
	2	12 (8.3)
	3	34 (23.6)
	4	48 (33.3)
	5	25 (17.4)
	6	11 (7.6)
Do you smoke tobacco or shesha	No	119 (82.6)
	Yes	25 (17.4)
Has your consumption of tobacco increased during the last year	No	16 (64.0)
	Yes	9 (36.0)
Have you taken psychoactive medication in the last year	No	139 (96.5)
	Yes	5 (3.5)

Table-2: Frequency and Cumulative Frequency Distributions of Respondents by Degree of Burnout (High, Average and Low) with 95% CI in Each of the Three Dimensions

Burnout	EE (n=144)	% (95% CI)	Cumulative %	DP (n=144)	% (95% CI)	Cumulative %	PA (n=144)	% (95% CI)	Cumulative %
High	77	53.5 (34.15-37.28)	35.5	56	38.9 (13.61-15.64)	38.9	64	44.4 (26.19-28.74)	44.4
Moderate	47	32.6 (19.18-21.54)	86.1	31	21.5 (6.91-7.67)	60.4	39	27.1 (36.07-37.11)	71.5
Low	20	13.9 (8.16-10.94)	100.0	57	39.6 (1.76-2.56)	100.0	41	28.5 (43.06-44.55)	100.0



Fugure-1: Distribution of the Proportions of Respondents by High Burnout Score in Each of the Three Dimensions and in All Three Dimensions

Table-3: Frequency and Cumulative Frequency Distributions of Respondents by High Burnout Score in None (0) or Any One, Any Two or All Three Dimensions (1, 2 or 3) with 95% CI

High Burnout	n=144	%	95% CI
No Dimension	35	24.3	17.8-31.8
One Dimension	48	33.3	26.0-41.3
Two Dimensions	57	39.6	31.8-47.7
All Three Dimensions	4	2.78	0.89-6.6

Table-4: Average Scores of Subscales of the Maslach Burnout Inventory Human Service Survey (MBI-HSS) among Doctors (N=144)

Burnout Subscale	Mean	SD	95% CI
Emotional	27.07	11.39	25.19-28.95
Depersonalization	8.12	6.13	7.11-9.13
Personal Accomplishment	34.59	7.87	33.29-35.89

SD=Standard deviation; 95% CI=95% confidence interval

The average years in current work was (4.63 ± 3.86) where half of them (51.4%) worked 44 hours per week, and 59 (41%) saw more than 120 patients per week. Table (2) and figure (1) lists the frequency distributions of respondents by degree of burnout (high, average or low) in the three dimensions (EE, DP, PA). Table (3) gives the frequency distribution of respondents by presence of high burnout scores in none (0), one or more of the three dimensions (1, 2 or 3). For both tables, 95% CI of the proportion is tabulated. In all, 53.5% of respondents scored high for EE (95% CI = 34.15-37.28), 38.9% for high DP (95% CI = 13.61-15.64), 28.5% low for PA (95% CI = 43.06-44.55) and 2.78% of respondents (95% CI = 0.89-6.6) scored high for burnout in all three dimensions. Only 24.3% of doctors (95% CI = 17.8-31.8) did not score high for burnout in any dimension. Mean scores were obtained for each of the three MBI subscales (Table 4). For the emotional exhaustion and depersonalization subscales, high mean scores reflect high levels of burnout, whereas for the personal accomplishment subscale low scores reflect high levels of burnout.

Tables (5) and (6) list the results of the analysis of association between the three dichotomous burnout outcome variables (a categorical variable for high burnout in each of the three dimensions of EE, DP and PA) and the questionnaire categorical and continuous variables. The significant associations include those between the emotional exhaustion high burnout outcome variables and job satisfaction (higher in non-satisfied doctors, 88.5% CI 38.34-42.44 and P< 0.001), intention to change job (higher in those considering to change their jobs, 80% CI 35.93-40.95 P= 0,001) and age (higher in ages below 34, 65% CI 34.25-38.29 P= 0.008). Depersonalization high burnout was associated with physicians taking psychotropic drugs (80% CI 11.77-26.23 P= 0.015) and Years of qualification (higher in physicians graduated in the last 5 years from medical school, (54.4% CI 12.78-15.55 P=0.021). Personal accomplishment high burnout was significantly associated with marital status (higher in married, 31.4% CI 43.13-44.60 P= 0.042), board qualification (higher in board qualified, 32.8% CI 43.42-45.85 P 0,036) and smoking tobacco or water bubble (higher in non-smokers, 29.4% CI 42.69-44.28 P= 0.035).

Table-5: Associations between Categorical Variables in the Questionnaire and the Three Burnout Outcome Variables (High Burnout in Each of the Three Dimensions) Explored using Chi-Square

Characteristics		EE High Burnout			DP High Burnout			PA High Burnout		
		N	%	95% CI	N	%	95% CI	N	%	95% CI
Gender (%)	Male	45	**51.1**	33.99-37.87	36	**40.9**	12.93-15.63	22	**25**	42.94-45.51
	Female	32	**57.1**	32.67-38.15	20	**35.7**	13.64-16.86	19	**33.9**	42.60-44.04
	P Value			**0.744**			**0.363**			**0.224**
Nationality (%)	Saudi	44	**64.7**	34.14-37.63	36	**52.9**	13.10-15.57	12	**17.6**	41.60-44.07
	Non-Saudi	33	**43.4**	32.54-38.43	20	**26.3**	13.25-17.05	29	**38.2**	43.28-45.14
	P Value			**0.803**			**0.445**			**0.643**
Marital Status	Married	63	**52.1**	34.27-37.76	46	**38.0**	13.72-15.93	38	**31.4**	43.13-44.60
	Un-married	14	**63.6**	30.38-38.34	10	**45.5**	10.88-16.72	2	**9.09**	34.15-46.85
	P Value			**0.864**			**0.400**			**0.042**
Job Title	Consultant	1	**14.3**	-	2	**28.6**	10.00-10.00	4	**57.1**	38.97-49.03
	Senior registrar	14	**60.9**	32.21-38.94	12	**52.2**	12.81-18.02	6	**26.1**	42.06-44.60
	Registrar	25	**43.1**	31.59-38.89	14	**24.1**	13.82-17.46	24	**41.4**	42.95-45.13
	SHO	12	**80.0**	32.52-40.15	5	**33.3**	08.83-13.97	3	**20.0**	40.87-48.46
	Resident	25	**61.0**	33.78-38.70	23	**56.1**	12.99-16.40	4	**9.76**	38.72-45.78
	P Value			**0.867**			**0.081**			**0.643**
Board Qualified	No	53	**61.6**	33.93-37.85	35	**40.7**	13.06-15.46	22	**25.6**	42.19-43.99
	Yes	24	**41.4**	32.56-38.11	21	**36.2**	13.30-17.18	19	**32.8**	43.42-45.85
	P Value			**0.747**			**0.353**			**0.036**
Income	25000+	8	**44.4**	31.56-39-69	9	**50**	10.77-16.57	6	**33.3**	41.35-46.65
	20000-25000	20	**71.4**	31.80-38.30	17	**60.7**	13.59-17.35	4	**14.3**	41.45-43.05
	15000-20000	27	**54.0**	32.69-37.46	22	**44.0**	12.76-16.60	10	**20.0**	41.90-45.70
	<15000	22	**45.8**	33.34-40.93	8	**16.7**	11.71-15.79	21	**43.8**	42.95-45.15
	P-value			**0.725**			**0.616**			**0.592**
How many patient do you see per week	>120	27	**45.8**	32.33-38.11	16	**27.1**	12.10-15.65	24	**40.7**	43.44-45.56
	100-120	13	**40.6**	32.98-42.56	12	**37.5**	12.21-17.12	9	**28.1**	41.51-43.82
	80-100	15	**71.4**	29.69-36.85	10	**47.6**	10.75-16.45	5	**23.8**	40.14-44.66
	<80	22	**68.8**	34.16-39.38	18	**56.3**	13.84-17.82	3	**9.38**	37.43-50.57
	P-value			**0.302**			**0.372**			**0.111**
How many hour do you work per week	>44	9	**40.9**	30.26-39.96	6	**27.3**	12.43-16.57	6	**27.3**	40.65-46.68
	44	45	**60.8**	34.58-38.93	31	**41.9**	13.50-16.18	22	**29.7**	42.70-44.75
	<44	23	**47.9**	31.18-36.64	19	**39.6**	12.14-16.50	13	**27.1**	42.54-45.46
	P-value			**0.269**			**0.894**			**0.939**
How many hour do you sleep per day	>8	3	**60.0**	16.67-57.33	3	**60.0**	12.16-22.50	1	**20.0**	-
	6-8	39	**47.6**	32.37-36.40	25	**30.5**	13.13-15.99	30	**36.6**	43.18-44.95
	<6	35	**61.4**	34.53-39.64	28	**49.1**	12.77-16.01	10	**17.5**	41.23-44.37
	P-value			**0.234**			**0.448**			**0.224**
Do you do night shift	No	63	**55.3**	34.15-37.72	47	**41.2**	13.33-15.35	29	**25.4**	42.59-44.24
	Yes	14	**46.7**	31.10-38.33	9	**30**	12.04-20.19	12	**40**	43.06-46.44
	P Value			**0.553**			**0.202**			**0.101**
Do you work during week end	No	60	**52.2**	33.81-37.52	45	**39.1**	13.10-15.26	32	**27.8**	42.71-44.35
	Yes	17	**58.6**	32.75-39.01	11	**37.9**	13.65-19.26	9	**31.0**	42.79-46.77
	P Value			**0.910**			**0.074**			**0.166**
How many days were you off work on sick leave	0-7	68	**51.5**	34.33-37.49	53	**40.2**	13.55-15.69	35	**26.5**	42.94-44.66
	8-14	5	**62.5**	21.58-50.82	2	**25.0**	9.15-21.85	4	**50.0**	41.45-45.55
	15-30	3	**75.0**	24.54-32.13	1	**25.0**	-	2	**50.0**	25.44-63.56
	P-value			**0.176**			**0.869**			**0.893**
Have you seriously considered changing your job at least once over	Yes	32	**80.0**	35.93-40.95	19	**47.5**	12.93-16.44	9	**22.5**	42.81-45.41
	Undecided	10	**50.0**	33.03-43.37	8	**40.0**	10.98-18.02	4	**20.0**	39.16-49.34
	No	35	**41.7**	30.65-34.38	29	**34.5**	13.13-16.11	28	**33.3**	42.67-44.61
	P-value			**0.001**			**0.994**			**0.817**
How satisfied are you with your current job	Strongly satisfied	14	**38.9**	29.20-34.52	10	**27.8**	10.62-17.18	11	**30.6**	42.73-46.54
	Satisfied	40	**48.8**	32.04-36.71	30	**36.6**	13.78-16.56	26	**31.7**	42.42-44.20
	Not –satisfied	23	**88.5**	38.34-42.44	16	**61.5**	12.21-15.91	4	**15.4**	42.75-46.75
	P-value			**0.000**			**0.523**			**0.212**
Do you smoke tobacco or shesha	No	60	**50.4**	34.18-37.72	46	**38.7**	13.41-15.68	35	**29.4**	42.69-44.28
	Yes	17	**68.0**	31.14-38.62	10	**40.0**	12.26-17.74	6	**24.0**	43.71-47.62
	P Value			**0.577**			**0.734**			**0.035**
Have you taken psychoactive medication in the last year	No	72	**51.8**	33.84-37.07	52	**37.4**	13.30-15.28	41	**29.5**	-
	Yes	5	**100.0**	30.42-34.38	4	**80.0**	11.77-26.23	0	**0.0**	
	P Value			**0.220**			**0.015**			

Table-6: The Associations between Continuous Variables and the Three Burnout Outcome Variables (High Burnout in Each of the Three Dimensions) Explored using the Independent Samples T-Test and Two-Way ANOVA F-Tests

Characteristics		EE High Burnout			DP High Burnout			PA High Burnout		
		N	%	95% CI	N	%	95% CI	N	%	95% CI
Age Group	25-34	41	**65.0**	(34.25-38.29)	33	**52.4**	(12.71-15.35)	11	**17.5**	(41.35-44.65)
	35-44	26	**50.0**	(34.15-40.23)	17	**32.7**	(13.60-17.34)	13	**25.0**	(42.90-45.41)
	45+	10	**34.5**	26.88-32.32)	6	**20.7**	(10.68-20.32)	17	**58.6**	(42.75-45.36)
	F	**5.143**			**0.987**			**0.868**		
	P-value	**0.008**			**0.379**			**0.428**		
No. of Children	Nil	7	**70.0**	(33.38-44.05)	5	**50.0**	(10.74-22.46)	1	**10.0**	-
	1-2	29	**50.9**	(32.97-37.99)	21	**36.8**	(12.15-14.99)	17	**29.8**	(43.32-45.62)
	3-4	24	**55.8**	(33.13-39.62)	18	**41.9**	(13.43-17.23)	16	**37.2**	(42.32-44.68)
	5+	3	**25.0**	(14.79-49.21)	2	**8.0**	-	5	**41.7**	(40.54-47.86)
	F	**0.758**			**2.321**			**0.737**		
	P-value	**0.522**			**0.089**			**0.537**		
Years of Qualification as MD	1-5	41	**71.9**	(34.37-38.46)	31	**54.4**	(12.78-15.55)	8	**14.0**	(40.75-43.50)
	6-10	14	**53.8**	(32.25-40.18)	12	**46.2**	(11.76-14.24)	6	**23.1**	(42.71-46.62)
	10-15	9	**36.0**	(31.48-44.74)	5	**20.0**	(14.64-21.76)	6	**24.0**	(42.04-47.29)
	16+	13	**36.1**	(27.71-34.90)	8	**22.2**	(12.71-20.54)	21	**58.3**	(42.81-45.09)
	F	**2.414**			**3.543**			**2.047**		
	P-value	**0.073**			**0.021**			**0.124**		
Years in Current Work	1-3	47	**64.4**	(34.03-38.06)	33	**45.2**	(13.09-15.82)	13	**17.8**	(42.35-45.03)
	4-6	18	**43.9**	(32.29-39.71)	16	**39.0**	(12.97-16.91)	15	**36.6**	(42.83-45.44)
	7+	12	**40.0**	(29.84-38.16)	7	**23.3**	(10.73-18.76)	13	**43.3**	(41.93-45.15)
	F	**0.431**			**0.087**			**0.232**		
	P-value	**0.652**			**0.917**			**0.794**		

Table-7: The Associations between Factors and the Mean Results of Emotional Exhaustion

Characteristics		N	Means ± SD	P value
Gender (%)	Male	88	26.69±11.54	**0.621**
	Female	56	27.66±11.28	
Nationality (%)	Saudi	68	30.34±9.35	**0.001**
	Non-Saudi	76	24.14±12.29	
Marital Status	Married	121	27.02±11.51	**0.621**
	Un-married	22	28.32±10.15	
Job Title	Consultant	7	20.57±7.50	**0.013**
	Senior registrar	23	28.39±1.84	
	Registrar	58	23.97±12.47	
	SHO	15	31.93±10.61	
	Resident	41	30.05±9.44	
Board Qualified	No	86	28.72±11.34	**0.034**
	Yes	58	24.62±11.12	
Income	25000+	18	26.28±10.25	**0.344**
	20000-25000	28	30.11±10.44	
	15000-20000	50	27.40±10.50	
	<15000	48	25.25±13.03	
How many patient do you see per week	>120	59	24.29±12.28	**0.021**
	100-120	32	26.31±11.53	
	80-100	21	29.00±9.17	
	<80	32	31.69±9.46	
How many hour do you work per week	>44	22	25.44±10.29	**0.395**
	44	74	28.28±12.49	
	<44	48	31.69±9.46	
How many hour do you sleep per day	>8	5	29.00±13.93	**0.026**
	6-8	82	24.85±10.98	
	<6	57	30.09±11.23	
Do you do night shift	No	114	27.60±11.39	**0.281**
	Yes	30	25.07±11.35	
Do you work during week end	No	115	26.61±11.56	**0.335**
	Yes	29	28.90±10.71	
How many days were you off work on sick leave	0-7	131	26.80±11.44	**0.693**
	8-14	8	30.25±12.71	
	15-30	4	25.75±5.32	
Have you seriously considered changing your job at least once over	Yes	40	34.63±10.14	**0.000**
	Undecided	20	29.10±11.12	
	No	84	22.99±10.08	
How satisfied are you with your current job	Strongly satisfied	36	22.22±9.71	**0.000**
	Satisfied	82	25.80±10.78	
	Not –satisfied	26	37.77±8.68	
Do you smoke tobacco or shesha	No	119	26.76±11.34	**0.416**
	Yes	25	28.76±11.34	
Have you taken psychoactive medication in the last year	No	139	26.63±11.28	**0.013**
	Yes	5	39.40±7.23	

Tables (7, 8 and 9) show the mean results of the analysis of association between the three burnout outcome variables (the three dimensions of EE, DP and PA) and the questionnaire categorical variables. It clarifies those who are at risk for developing high levels for burnout in the future. For emotional exhaustion, it showed significant high means for Saudi, non-board qualified, taking psychoactive drugs, SHO, seeing less than 80 patients per week, sleeping less than 6 hours per day, changing job and non-satisfied doctors. For depersonalization, higher means were seen in Saudi, taking psychoactive drugs, Residents, salary 20000-25000 SR, seeing less than 80 patients per week, and non-satisfied doctors. Lastly for personal accomplishment, lower means were seen in Saudi, unmarried, non-board qualified, taking psychoactive drugs, Residents, salary 20000-25000 SR, seeing less than 80 patients per week, sleeping less than 6 hours per day.

Table-8: The Associations between Factors and the Mean Results of Depersonalization

Characteristics		N	Means ± SD	P value
Gender (%)	Male	88	7.86±6.25	**0.685**
	Female	56	8.28±6.08	
Nationality (%)	Saudi	68	10.09±5.58	**0.000**
	Non-Saudi	76	6.36±6.09	
Marital Status	Married	121	8.03±6.22	**0.517**
	Un-married	22	8.95±5.56	
Job Title	Consultant	7	5.14±4.38	**0.000**
	Senior registrar	23	10.48±6.26	
	Registrar	58	5.84±6.12	
	SHO	15	7.40±3.62	
	Resident	41	10.78±5.668	
Board Qualified	No	86	8.20±5.91	**0.850**
	Yes	58	8.00±6.49	
Income	25000+	18	9.11±5.81	**0.000**
	20000-25000	28	11.07±6.35	
	15000-20000	50	9.08±6.24	
	<15000	48	5.02±4.67	
How many patient do you see per week	>120	59	6.34±5.51	**0.001**
	100-120	32	7.72±6.19	
	80-100	21	8.48±6.10	
	<80	32	11.56±5.95	
How many hour do you work per week	>44	22	7.50±5.19	**0.676**
	44	74	8.55±6.29	
	<44	48	7.73±6.32	
How many hour do you sleep per day	>8	5	11.40±8.26	**0.098**
	6-8	82	7.23±5.77	
	<6	57	9.11±6.30	
Do you do night shift	No	114	8.11±6.06	**0.988**
	Yes	30	8.13±6.50	
Do you work during week end	No	115	7.77±6.00	**0.180**
	Yes	29	9.48±6.53	
How many days were you off work on sick leave	0-7	131	8.31±6.17	**0.482**
	8-14	8	5.88±6.49	
	15-30	4	6.50±4.51	
Have you seriously considered changing your job at least once over	Yes	40	9.55±5.94	**0.144**
	Undecided	20	8.70±5.88	
	No	84	7.30±6.20	
How satisfied are you with your current job	Strongly satisfied	36	6.08±5.88	**0.005**
	Satisfied	82	8.05±6.29	
	Not –satisfied	26	11.15±4.76	
Do you smoke tobacco or shesha	No	119	8.08±6.06	**0.857**
	Yes	25	8.32±6.581	
Have you taken psychoactive medication in the last year	No	139	7.80±5.91	**0.001**
	Yes	5	17.00±5.96	

Table-9: The Associations between Factors and the Mean Results of Personal Accomplishment

Characteristics		N	Means ± SD	P value
Gender (%)	Male	88	33.82±7.78	**0.140**
	Female	56	35.80±7.91	
Nationality (%)	Saudi	68	32.07±7.70	**0.000**
	Non-Saudi	76	36.84±7.354	
Marital Status	Married	121	35.26±7.78	**0.006**
	Un-married	22	30.32±6.09	
Job Title	Consultant	7	39.00±7.59	**0.000**
	Senior registrar	23	34.30±6.66	
	Registrar	58	37.14±7.33	
	SHO	15	37.07±5.06	
	Resident	41	29.49±7.80	
Board Qualified	No	86	33.36±8.09	**0.022**
	Yes	58	36.41±7.21	
Income	25000+	18	35.28±7.81	**0.001**
	20000-25000	28	31.64±6.84	
	15000-20000	50	32.68±8.31	
	<15000	48	38.04±6.78	
How many patient do you see per week	>120	59	37.63±7.17	**0.000**
	100-120	32	34.84±7.00	
	80-100	21	33.95±6.79	
	<80	32	11.56±5.95	
How many hour do you work per week	>44	22	35.59±6.19	**0.411**
	44	74	35.08±7.23	
	<44	48	33.38±9.36	
How many hour do you sleep per day	>8	5	33.80±8.76	**0.031**
	6-8	82	36.07±7.58	
	<6	57	32.53±7.87	
Do you do night shift	No	114	34.20±7.68	**0.249**
	Yes	30	36.07±8.52	
Do you work during week end	No	115	34.59±7.74	**0.998**
	Yes	29	34.59±8.48	
How many days were you off work on sick leave	0-7	131	34.34±7.78	**0.502**
	8-14	8	37.50±8.82	
	15-30	4	36.25±10.78	
Have you seriously considered changing your job at least once over	Yes	40	33.88±8.41	**0.710**
	Undecided	20	34.10±7.27	
	No	84	35.05±7.79	
How satisfied are you with your current job	Strongly satisfied	36	35.69±7.34	**0.266**
	Satisfied	82	34.78±7.93	
	Not –satisfied	26	32.46±8.25	
Do you smoke tobacco or shesha	No	119	34.71±7.91	**0.702**
	Yes	25	34.04±7.79	
Have you taken psychoactive medication in the last year	No	139	34.89±7.79	**0.015**
	Yes	5	26.20±5.02	

Discussion

In summary, this study of burnout in PHC with a validated tool to measure burnout achieved a response rate of 72%. High burnout was defined in this study as high scores in emotional exhaustion (>26), high scores in depersonalization (>9) and low scores in personal accomplishment (<34), and we combined the three subscales of burnout into one variable (high degree of burnout or burnout syndrome). This combination was done in three previous studies.[6,14,15]

In our study, 53.5% of respondents scored high for EE burnout, 38.9% scored high for DP burnout and 28.5% scored high for PA burnout. Only 24.3% of respondents did not score high for burnout in any dimension, whilst 39.6% scored high for burnout in at least two dimensions and 2.78% scored high for all three and met the criteria of burnout syndrome. Where low job satisfaction, expressed intention to change job, tobacco and psychotropic medication, younger

Table-10: Descriptive Analysis of Previously Published Studies of Burnout in Family Doctors (FDs) or Primary Care Doctors (PHC) Compared with Our Study

Population	Authors and Year	Burnout Rates	Comparable to Our Study Data	Comparison	Limitations of Comparison
Yemen, Yemeni doctors	Al-Dubai and Krishna[6] Published 2010	High EE burnout in 63.2%, high DP burnout in 19.4%, high PA burnout in 33.0%	High EE burnout in 53.5%; high DP burnout in 38.9%; high PA burnout in 28,5%; 2.78% in all three dimensions	Higher rates reported	Not all respondents were PHC doctors
Europe, European EGRPN FDs	Solar et al[5] Published 2008	High EE burnout in 43.0%, high DP burnout in 35.3%, high PA burnout in 32.0%		Comparable rates reported	
Spain, Spanish FDs and paediatricians	Esteva et al.[16] published 2006	High EE burnout in 53%; high DP burnout in 47%; high PA burnout in 33%		Comparable rates reported	Not all respondents were PHC doctors
Switzerland, Swiss primary care doctors	Goehring et al.[22] published 2005	High EE burnout in 19%; high DP burnout in 22%; high PA burnout in 16%		Lower rates reported	
France, French FDs	Cathebras et al.[17] published 2004	5% scored high in all three dimensions		Lower rates reported	
Spain, Spanish primary care doctors	Prieto Albino et al.[18] published 2002	66% scored high in at least one dimension		Higher rates reported	Not all respondents were PHC doctors
Canada, Canadian FDs	Thommasen et al.[19] published 2001	Moderate to high EE burnout in 80%; moderate to high DP burnout in 61%; moderate to high PA burnout in 44%		Higher rates reported	
Italy, Italian FDs	Grassi and Magnani.[20] published 2000	High EE burnout in 32%; high DP burnout in 27%; high PA burnout in 13%		Lower rates reported	
Britain, British FDs	Kirwan and Armstrong[21] published 1995	Mean score of 26.1 for EE; 9.8 for DP; 36.2 for PA		Comparable rates reported	Study in mid-1990s

age, recent graduation, married and board qualified doctors were associated with high burnout. The prevalence of burnout in this study was lower than that found by Al-Dubai in Yemen where the prevalence was 11.7%.[6] In another study, done in Jeddah in 2008 on female Saudi doctors, (7.3%) of 373 respondents satisfied all the 3 subscale scores for burnout syndrome, demonstrating high emotional exhaustion, high depersonalization, and low personal accomplishment .[7]

Table 10 summarizes the comparisons between burnout scores and rates reported previously in the literature[6,16-22] and the data from this study. Some earlier studies did report higher rates of burnout, but a similar number of recent studies reported similar data. Rates were comparably less in this study with regard to burnout syndrome as a whole. While for other parameters, namely EE, DP and PA, rates were found to be comparable. As expected, high burnout was more likely with low job satisfaction and intention to change job. Personal factors such as younger age, and marital status were also linked with burnout, but no significant deference between males and females.

In this study, we observed that burnout was more likely with increasing smoking and water bubble and increased use of psychotropic medication, which may be manifestations of low self-esteem, difficult in coping with stress or being potential for drug addiction. Other variables, such as income, sick leave and work load were surprisingly rather weakly linked with high burnout, whilst others (years since graduation, having further qualifications, increasing smoking) seemed to be linked with high burnout ; however, such ambiguous findings have been previously described in burnout research in doctors, for example, by Deckard et al.[4]

Generally, the pattern of associated variables appears different to that reported by Goehring et al. for those variables which were included in both studies like for example the work load and the age.[22]

The questionnaire was constructed with reference to the current literature at the time and included those variables that had been reported to be associated with, or to cause, burnout. But the possibility exists that other variables may have an important role to play. For example, PHC doctors may be more likely to suffer burnout if they perceive that they have poor control of their place of work, but this variable was unfortunately not included in our questionnaire.[23]

This study has some limitations. The most important one is the cross sectional nature of this study which does not allow us to observe a causal relationship between the variables and outcomes. The low rate of burnout syndrome (2.78%, four respondents) of this study limited us to analyze the principal research questions, especially the second one using the regression models. It was only possible to analyze subcategories. Another limitation is the exclusive reliance on self-reported rating scales and psychosocial and professional characteristics, which raises the issue of measurement error, related to systematic positive or negative response tendencies.

Conclusion

There is a significant degree of burnout among primary care practitioners in Riyadh Military Hospital, especially in emotional exhaustion, although comparisons with other countries are still favorable regarding burnout syndrome, 2.78% only in our study. Burnout seems to be a common problem in primary care doctors, with high levels apparently affecting three-quarters of respondents in this study. In all, 53.5% of respondents reported high levels of EE, 38.9% DP and 28.5% low feelings of PA. High burnout was found to be more likely in association with several of the variables under study, especially low job satisfaction, expressed intention to change job, tobacco and psychotropic medication, younger age, recent graduation, married and board qualified doctors.

Future research is needed to explore the problem in depth, develop models to describe the phenomenon and to identify causative factors and effective intervention strategies. Job satisfaction is an important element in such research, and it should be prioritized by higher authorities in hospital as an action point for research.

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