

Burnout and its correlates in Saudi family medicine residents: An observational study from Aseer, Saudi Arabia

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ABSTRACT

Background: Burnout is a workplace phenomenon and is high among healthcare workers, particularly physicians. It brings in significant negative impact on patient care and physicians. Considerable number of studies have highlighted burnout issues on residents of other specialties; however, scarcity of data exist on burnout among family medicine residents. **Objectives:** This study aimed to measure the prevalence of burnout, and its predictors amongst family medicine residents in Aseer region, Saudi Arabia. **Methodology:** This cross-sectional study was conducted among 133 family medicine residents using a custom-designed and validated Self administered questionnaire. The Maslach Burnout Inventory Human Services Survey (MBI-HSS) was used to measure the three dimensions of burnout: emotional exhaustion (EE), depersonalisation (DP) and personal accomplishment (PA). **Results:** The overall prevalence of burnout was 84.2%. In terms of three dimensions of burnout, 29.3% of respondents scored high for EE burnout, 19.5% for DP and 79.7% for PA. High burnout in all three dimensions was found to be strongly associated with a number of variables under study. Male gender (aOR = 3.41, 95% CI 1.1-11.10; $P = 0.042$), married residents (aOR = 3.32, 95% CI 1.1-10.48) and use of anti-anxiety drugs (aOR = 3.75, 95% CI = 2.0-21.26) were identified as predictors of high emotional exhaustion. A work schedule of more than 8 hours per day (aOR = 3.79, 95% CI 1.12-10.87) and young age (aOR = 2.6, 95% CI 1.12-10.87) were identified predictors for high depersonalisation and low personal accomplishment, respectively. **Conclusions:** Prevalence of burnout in this study exhibits that it is a common problem in family medicine residents. There is a need for a nationwide longitudinal study targeting the family medicine residents to study the effects of burnout on physician well-being and patient care.

Keywords: Burnout, family medicine residents, occupational stress, Saudi Arabia

Introduction

Burnout is a work-related syndrome associated with emotional exhaustion, depersonalisation and a reduced personal accomplishment.^[1] Emotional exhaustion insinuates the

feelings of being exhausted both emotionally and physically. Depersonalisation (cynicism) represents the interpersonal dimension, and third dimension is related to self-evaluation, described as low personal accomplishment.^[2,3]

Burnout is usually seen in demanding jobs and in people who care for others specially healthcare workers.^[1,3] Globally, the prevalence ranges between 12% and 81%.^[4-8]

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Studies have reported high levels of burnout among family practitioners in America,^[9,10] Europe^[11,12] and Saudi Arabia.^[13,14]

A horde of factors contribute to stress, resulting in burnout among physicians. These can be grouped into personal factors, job-related factors and organisational factors. Younger age and female gender increase the risk of burnout.^[1,15,16] Job-related factors include high workloads, long working hours, night duties, completing medical records and filing electronic medical records.^[1,17] Choice of specialty has also been shown to influence burnout.^[16,17] As a specific group, residents during training are often subject to typical circumstances of uncontrolled schedules, high demands from seniors and consultants, inadequate personal time and low workplace support.^[8] Family physicians are at a high risk of developing burnout due to the multifaceted nature of their job, which includes providing accessible, comprehensive, continuing care to patients and their families.^[9]

Burnout influences the physician as well as patients under their care. Physicians affected by burnout may complain of feeling tired, exhausted, fatigued, inattentive, and irritable and may also have a psychological impact which may influence the physician to self-medicate with anti-depressant medication, cause suicidal ideation or alcohol abuse.^[18-21] Burnout is also associated with a loss of empathy and impaired job performance. It increases medical errors^[22] and increases the risk of malpractice lawsuits. It reduces the quality of patient care and decreases patient satisfaction^[19]

In Saudi Arabia, family medicine residents are the primary contact for patients visiting the primary health care centres, thus, the problem of burnout within this group would compromise the quality of patient care. Considering the seriousness of the issue and the paucity of information, this study aims to measure the prevalence of burnout in its three dimensions in this group. It is expected that the data generated from this study will act as a basis for policy development in the region.

Materials and Methods

This analytical cross-sectional study was conducted among family medicine (FM) residents in the Saudi Board of Health specialties in Abha and Khamis Mushait, the two major cities with training hospitals in the Asser region, south-western Saudi Arabia. One hundred and thirty three FM residents are currently with the Saudi Board for training, and all agreed to participate in the study.

The study was approved by the research ethics committee at King Khalid University [HAPO-06-B-001] via approval number ECM#2020-07-02. This web-based survey was conducted between June 15th and July 20th 2020. A list of all of the FM residents (names, e-mails, and mobile numbers) was obtained from the administrative office of the Saudi Board of Health Specialties, Joint Program of Family Medicine, Aseer region. The researcher emailed a covering letter explaining the aim of the study and a web link for the questionnaire to all FM

residents, inviting them to participate in the study. Participants were also assured about the anonymity and full confidentiality of their responses. The responses were collected in a web-based custom-designed spreadsheet template. Repeated emails were sent until all residents had completed the questionnaire. A response from the participants implied consent.

The study instrument included questions regarding personal and professional characteristics of the residents. To measure burnout, the Maslach Burnout Inventory for Human Services Survey (MBI-HSS) was used. It is the most commonly used tool developed to measure burnout in human services workers and is regarded as the “gold standard” in measuring burnout. It is a 22 item self-administered questionnaire.^[2,3] The items are written in the form of statements about personal feelings and are answered in terms of the frequency with which the respondent experiences these feelings. The physicians score how often they find a statement (item) applicable to them (on a 7-point Likert scale ranging from 0 = “never” to 6 = “every day”). The scoring covers three dimensions: emotional exhaustion (EE), depersonalisation (DP), and personal accomplishment (PA). The EE domain consists of nine items, with a total score range of 0–54, the DP domain consists of five items, with a total score range of 0–30, and the PA domain consists of eight items, with a total score range of 0–48. Burnout was defined as high scores of EE and DP and a low score for PA. EE was classified as high burnout (≥ 27), average burnout (14–26) and low burnout (≤ 13). DP was classified as low burnout (≤ 5), average burnout (6–9) and high burnout (≥ 10). PA was defined as high burnout (≤ 33), average burnout (34–39), and low burnout (≥ 40) (inverse scale).

The data was analysed using the Statistical Package for the Social Sciences (SPSS) (version 22.0, IBM, Armonk, NY). For the statistical analyses, the burnout outcome variables were re-coded into high and not-high (average or low burnout). Categorical variables were presented in frequencies and percentages. The Chi-squared test was used to measure the association between different domains of burnout and sociodemographic and job characteristics. In addition, multiple logistic regression analyses were performed to predict the associated risk factors. The backward Wald model was used as the logistic regression model. The adjusted odds ratio (OR) with a 95% Confidence Interval (95% CI) was computed. The accepted level of significance was set below 0.05 ($P < 0.05$).

Results

Table 1 shows the personal characteristics of the respondents. Seventy-one percent of the respondents were below 30 years of age, and 53.4% were males. More than half of the respondents (57.1%) were married, while 31.6% reported having children. Most of them (80%) live with their family and have an income of more than 11,000 SR per month (78.2%). Regular exercise was practiced by fewer than 50% of residents and 15.8% were smokers. There were 31 respondents who reported the use of anti-anxiety medication (23.3%), while

23 (17.3%) are suffering from some form of chronic illness. A poor sleep time of less than 6 hours per day was reported by 32.3% of residents.

Table 2 shows the job-related information of the study participants. An almost equal number of residents from the four levels participated in the study. The total duration of their current employment was less than 5 years for 72.9% of participants. Most of the residents were working in outdoor patient clinics (86.5%) and on day shifts (82%). The working week is five days for all residents and working hours are limited to 8 hours per day for 89.5% of them. Rest times during work are used by 78.2% and regular annual vacations are taken by 77.4% of residents. One in three respondents reported having been absent from work during the past year.

The prevalence of the three dimensions of burnout is presented in Table 3. There was high emotional exhaustion in 29.3% of the respondents, and low to medium burnout in 70.7% of respondents. High DP (cynicism) was reported by 19.5%

of respondents and low to medium DP in 80.6%. Personal accomplishment burnout was high in 79.7% of respondents. No burnout in any dimension was reported by 15.8% of respondents. The variability of burnout in terms of dimensions of burnout being experienced shows that 50.37% have burnout in only one dimension, which is most commonly personal accomplishment burnout (48.8%) and emotional burnout (1.5%). No respondent reported cynicism alone.

Thirty one respondents (23.3%) had burnout in two dimensions and 14 (10.5%) had burnout in all three dimensions. Overall burnout (burnout in at-least one of the three dimensions) was reported by a very high proportion of the study group (84.2%).

Table 4 illustrates information on the relationship of the three dimensions of burnout with the personal characteristics and job characteristics of the respondents. Emotional exhaustion was related to a variety of personal and job factors. Young age was protective against emotional exhaustion (OR = 0.3, 95% CI 2.21–5.96; *P* = 0.014). Male family medicine residents had significantly higher scores on emotional exhaustion compared

Table 1: Personal characteristics of the family medicine residents (n=133)

Characteristic	Frequency	Percentage
Age		
<30	95	71.4
≥30	38	28.6
Sex		
Male	71	53.4
Female	62	46.6
Marital status		
Married	76	57.1
Unmarried	57	42.9
Have children		
No	91	68.4
Yes	42	31.6
Type of family		
Nuclear	24	18
Extended	109	82
Income		
<11,000SR/month	29	21.8
≥11,000 SR/month	104	78.2
Regular exercise		
Yes	60	45.1
No	73	54.9
Smoking		
Smoker	21	15.8
Non Smoker	112	84.2
Use of anti-anxiety medication		
No	102	76.7
Yes	31	23.3
Chronic Illness		
No	110	82.7
Yes	23	17.3
Sleep duration		
<6 h	43	32.3
≥6 h	90	67.7

Table 2: Professional characteristics of the family medicine residents (n=133)

Characteristic	Frequency	Percentage
Residency year		
Level 1	32	24.1
Level 2	36	27.1
Level 3	30	22.6
Level 4	35	26.3
Total Duration of job in years		
<5 years	97	72.9
5-10 years	36	27.1
Current location of rotation		
Inpatient	18	13.5
Outpatient	115	86.5
Rotation schedule		
Day shift	109	82
Night Shift	24	18
On Call Duties in the past month		
No On Call Duties	54	40.6
On call duty	79	59.4
Average number of patients seen per rotation		
<30	93	69.9
≥30	40	30.1
Work hours per day		
8 h	119	89.5
>8 h	14	10.5
Rest time during work hours		
Yes	104	78.2
No	29	21.8
Regular annual vacation		
Yes	103	77.4
No	30	22.6
Absence from work in past year		
Yes	44	33.1
No	89	66.9

to females (OR = 2.17, 95% CI 1.10–4.74; $P = 0.014$) and married residents had significantly higher emotional exhaustion than unmarried respondents (OR = 5.2, 95% CI 2.15–12.94; $P \leq 0.001$). Chronic illness (OR = 4.2, 95% CI 1.65–10.69; $P = 0.002$) and the use of anxiety medication (OR = 7.94 95% CI 3.26–19.31; $P < 0.001$) were also statistically significant in residents with high emotional burnout. Sleep duration of 6 hours or more showed a protective effect on emotional exhaustion (OR = 0.18, 95% CI 0.08–0.42; $P < 0.001$). Residents with a job experience of less than 5 years had significantly higher emotional exhaustion (OR = 3.05, 95% CI 1.35–6.84; $P = 0.006$), as did residents who were absent from work in the past year (OR = 2.41, 95% CI 1.01–5.80; $P = 0.05$). In the dimension of DP, we found three variables that showed significant associations. Working hours per day, sleep duration and use of anti-anxiety drugs were related to cynicism among the residents. Residents who reported more than 8 hours of work per day had 3.71 times the risk of high DP burnout, and this was statistically significant ($p = 0.02$). Residents who sleep for more than 8 hours have a lower risk of developing high DP burnout (OR = 0.39, 95% CI 0.16–0.94; $P = 0.03$). Residents who used anti-anxiety medication also reported a high degree of DP (OR = 2.56, 95% CI 1.02–6.44; $P = 0.04$). The third dimension of burnout is measured by low personal accomplishment. The relationship of age with low personal accomplishment was statistically significant. The study participants who were in the younger age group have a higher level of burnout in this dimension (OR = 3.0, 95% CI 1.25–7.25; $P = 0.012$). Those residents who were absent from work in the past year also had a statistically significant association with high burnout levels for PA (OR = 2.72, 95% CI 1.15–6.48; $P = 0.02$).

The prevalence of high burnout among residents from all levels. Only EE is significantly higher in the fourth level compared to other levels. DP and PA do not vary significantly across the levels.

A regression model was developed with the factors that are significant in the Chi-squared test in the three dimensions of burnout. After controlling for other variables, male gender (aOR = 3.41, 95% CI 1.1–11.10; $P = 0.042$), marriage (aOR = 3.32, 95% CI 1.1–10.48; $P = 0.041$) and the use of anti-anxiety drugs (aOR = 3.75, 95% CI = 2.0–21.26; $P = 0.002$) were identified as predictors of high EE among FM residents. A work schedule of more than 8 hours per day acts as a predictor of DP, with an adjusted odds ratio of 3.79 ($p < 0.05$). Low personal accomplishment (high burnout) is predicted by young age (aOR = 2.6, 95% CI 1.12–10.87; $p = 0.03$) [Table 5].

Discussion

Professional burnout is a serious issue with detrimental effects on both the personal and professional life of the affected physician and is considered a public health crisis. In recent years, several studies have documented burnout among resident physicians in Saudi Arabia and our knowledge of this problem has undeniably advanced significantly; however, many gaps still exist in our

understanding. It is expected that the results of this study will enrich the available literature on this emergent physician health issue.

A recent systematic review published in JAMA in 2018 reported that the overall burnout prevalence ranged from 0% to 80.5%. EE, DP, and low PA prevalence ranged from 0% to 86.2%, 0% to 89.9%, and 0% to 87.1%, respectively.^[23] Similarly, this study also showed an overall high prevalence of burnout (84.2%). There was high EE in 29.3% of the respondents, high DP (cynicism) was reported by one fifth of the respondents, and low personal accomplishment (high burnout) was reported by a considerable proportion of residents. It is notable that the most common burnout experienced by the residents in our study group was low PA, while most other studies reported a higher level of EE and DP. These observations find resonance in studies focusing on FM residents in the KSA.^[13,24] Our findings can be attributed to the specialisation of our study group. Demanding specialties like anaesthesia, emergency medicine and surgery often report high emotional exhaustion and cynicism.^[25-27] On the contrary, FM physicians do not often deal with high acuity patients and emergency situations. Additionally, FM residents have a better rapport with patients due to the long-term treatments offered to patients with chronic illness and are involved in their comprehensive care to a greater level than emergency physicians.

This study focused on the relationship between the three dimensions of burnout with the personal characteristics and job characteristics of the respondents and we reached some interesting conclusions. Emotional exhaustion was related to a variety of personal and job factors. Male gender, married status and the use of anti-depression medication predict emotional burnout in our study group, while young age was protective

Table 3: Distribution of respondents in three dimensions of burnout

Burnout Dimension	Frequency (%)	95% CI
Emotional exhaustion		
Low	56 (42.1)	33.8-49.6
Medium	38 (28.6)	21.1-36.8
High	39 (29.3)	21.8-37.6
Depersonalization		
Low	85 (63.9)	55.6-72.2
Medium	22 (16.5)	10.5-23.3
High	26 (19.5)	12.8-25.6
Personal Accomplishment		
Low	13 (9.8)	5.3-15.0
Medium	14 (10.5)	6.0-15.8
High	106 (79.7)	72.9-86.5
Burnout variability		
No burnout	21 (15.8)	9.8-21.8
Burnout in one dimension	67 (50.37)	42.1-70.1
Burnout in two dimensions	31 (23.3)	16.5-35.5
Burnout in all three dimensions	14 (10.5)	6.0-15.8
Overall burnout prevalence	112 (84.20)	77.4-89.5

Table 4: Personal and job related factors associated with each of the three dimensions of Burnout

Variable	No	Yes	uOR	95%CI	P
Emotional exhaustion					
Age					
<30	73 (76.8)	22 (23.2)	0.373	2.21-5.96	0.014
≥30	21 (55.3)	17 (44.7)			
Gender					
Male	45 (63.4)	26 (36.6)	2.17	1.10-4.74	0.04
Female	49 (79.0)	13 (21.0)			
Marital status					
Married	44 (57.9)	32 (42.1)	5.2	2.15-12.94	<0.001
Unmarried	50 (87.7)	7 (12.3)			
Residency level					
Level1	25 (78.1)	7 (21.9)	-	-	0.01
Level 2	28 (77.8)	8 (22.2)			
Level3	24 (80.0)	6 (20.0)			
Level 4	17 (48.6)	18 (51.4)			
Use of antidepressant medication					
No	83 (81.4)	19 (18.6)	7.94	3.26-19.31	<0.001
Yes	11 (35.5)	20 (64.5)			
Having any chronic illness					
No	84 (76.4)	26 (23.6)	4.2	1.65-10.69	0.002
Yes	10 (43.5)	13 (56.5)			
Sleep duration					
<6 h	20 (46.5)	23 (53.5)	0.18	0.08-0.42	<0.001
≥6 h	74 (82.2)	16 (17.8)			
Duration of job in years					
< 5 years	75 (77.3)	22 (22.7)	3.05	1.35-6.84	0.006
5-10 years	19 (52.8)	17 (47.2)			
Absence from work in past year					
No	36 (81.8)	8 (18.2)	2.41	1.01-5.80	0.05
Yes	58 (65.2)	31 (34.8)			
Depersonalization					
Work hours per day					
8 h	99 (83.2)	20 (16.8)	3.71	1.16-11.87	0.02
>8 h	8 (57.1)	6 (42.9)			
Sleep duration					
<6 h	30 (69.8)	13 (30.2)	0.39	0.16-0.94	0.03
≥6 h	77 (85.6)	13 (14.4)			
Use of antianxiety medication					
No	86 (84.3)	16 (15.7)	2.56	1.02-6.44	0.04
Yes	21 (67.7)	10 (32.3)			
Personal accomplishment					
Age					
<30 years	14 (14.7)	81 (85.3)	3.0	1.25-7.25	0.012
≥ 30 years	13 (34.2)	25 (65.8)			
Absence from work in past year					
No	14 (31.8)	30 (68.2)	2.72	1.15-6.48	0.02
Yes	13 (14.6)	76 (85.4)			

uOR: unadjusted odds ratio; CI: Confidence interval

against it. The residents in level four experienced a significantly higher level of emotional exhaustion compared to other levels. Similar findings were reported in other studies.^[26,28] This may be due to the fact that younger residents are more likely to have fewer patient encounters in their initial years of training compared to residents in higher levels who have a greater clinical burden, and therefore have to interact more with consultants, patients, family members and ancillary staff. Married residents had more

than five times the risk of EE than unmarried residents. These findings are replicated in other studies from Saudi Arabia. In a multi-centred, multi-specialty survey of burnout amongst Saudi residents working in Riyadh and the Qassim region, married status increased the chance of burnout by 2.64 times compared to unmarried residents.^[8] Marriage comes with additional responsibilities which could contribute to burnout.^[29] Studies have consistently reported higher burnout among female physicians;

Table 5: Predictors of burnout: Multivariate logistic regression analysis

Burnout dimension	B	SE	aOR	95% CI	P
Emotional Exhaustion					
Gender					
Female*	1.23	0.601	1	1.1-11.10	0.042
Male			3.41		
Marital status					
Unmarried*	1.12	0.611	1	1.1-10.48	0.041
Married			3.32		
Medication for anxiety disorders					
No*	1.86	0.607	1	2.0-21.26	0.002
Yes			3.75		
Depersonalization					
Work hours per day					
8 h per day*	1.33	0.611	1	1.2-12.58	0.029
>8 h per day			3.79		
Personal accomplishment					
Age					
≥30 years*	1.24	0.613	1	1.12-10.87	0.03
<30 years			2.6		

*Reference category, B: Slope, SE: Standard error, aOR: Adjusted odds ratio, CI: Confidence interval

however, in our study, male FM residents had significantly higher scores for EE.^[30] It is not yet clearly understood whether gender plays an independent role in the occurrence of burnout or its identification or acts in combination with other factors. There is speculation that burnout is experienced by and manifests in men and women differently depending on gender expectations^[31]; in light of the findings of this study, it needed further exploration.

Daily working hours was identified as a significant predictor of cynicism which resonates in a national survey of burnout among US general surgery residents^[32] Some researchers have suggested that working hours alone may not have a bearing on the burnout, but when coupled with other factors like high workloads, sleep deprivation and physical inactivity, this may cause depersonalisation and other dimensions of burnout.^[33,34] This is corroborated by findings of this study; we observed that residents who sleep for more than 6 hours are protected against high burnout in the depersonalisation dimension, although other dimensions remain unaffected. A growing base of research has linked disturbances of sleep duration to burnout.^[35-37]

In this study, residents who used anti-anxiety medication reported a high degree of DP. There is a large body of evidence linking burnout with psychological distress and depression.^[19,38,39] It was out of the scope of this study to measure depression or anxiety; however, the use of medication by a considerable proportion of respondents and its relationship with high levels of burnout suggests that the psychological impact of burnout is high.

The third dimension of burnout is measured by low PA. Younger age was identified as a predictor of low PA (high level of burnout). A similar observation was made for a study of emergency physicians in the region.^[40] The association of young age with low personal accomplishment may be due to higher

job expectation of the residents along with greater pressure to increase their knowledge and skills. This area needs further in-depth exploration. In summary, this study revealed high degree of burnout among family medicine residents in this region. It is alarming that a high degree of burnout was reported in all three dimensions of burnout; emotional exhaustion, depersonalisation and personal accomplishment. Psychological well-being of the physicians is imperative to provide quality care to patients. This issue is all the more important, for family medicine residents as they are the gatekeepers of health care and are the first contact at the primary level of care in Saudi Arabia.

Conclusion

The overall prevalence of burnout among family medicine residents in the Aseer region is high and the extent of burnout among these residents is of concern. This study is unique as it identified factors relating to burnout in FM residents in Aseer region. Emotional exhaustion was related to male gender, being married and the use of antidepressant medication, while daily working hours were related to high depersonalisation and younger age for low personal accomplishment. There is a need for a nationwide longitudinal interventional study on the effects of burnout targeting residents in order to improve psychological well-being, professional careers and the quality of care provided to patients.

Limitations and Strengths of the Study

This research follows a cross-sectional design, so some limitations were unavoidable. First, the cross-sectional study could not establish causality. Second, the findings of the current study are derived from a sample from one region of Saudi Arabia, thus which limits generalizability and may be subject to selection bias. Furthermore, certain biases such as response and recall bias in the study were inevitable because of the self-reported nature of the survey. Despite its limitations, the study has a number of strengths. It is the first of its kind to explore the rate and risk factors of burnout in FM residents in this region and provides valuable information to show the size of the problem in this population. The findings of the study could help to design further nationwide longitudinal intervention studies in similar populations in other regions of Saudi Arabia in order to develop preventive programs for burnout.

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Conflicts of interest

There are no conflicts of interest.

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