

# Burnout syndrome among southern region orthopedic surgeons, Saudi Arabia

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## ABSTRACT

**Background:** Burnout is known as result of long term exposing to stress. There are some factors that may cause stress in physicians: nature of work, their training, their public image, their families and themselves. The person who has burnout syndrome (BOS) seems like to have tiredness, low energy, nervousness, and mentally unstable. The aim of the study is to assess the pattern and magnitude of burnout among orthopedic surgeons in southern region, Saudi Arabia. **Methodology:** A descriptive cross-sectional survey was applied targeting all orthopedic surgeons in 12 hospitals all southern region, Saudi Arabia during the period from December 2018 to April 2019. Data were collected using self-administered questionnaire that was developed by the researchers. The questionnaire included personal data. Burnout was assessed using Maslach Burnout Inventory Scale. **Results:** A total sample of 107 orthopedic surgeons were included with their ages ranged from 25 to 65 years old with mean age of  $38.1 \pm 8.9$  years. About 94% of the surgeons were males and 43.9% were Saudi. Generally, the surgeons recorded mean score for emotional exhaustion of 18.9 points out of 54 with mean score% of 35.1%. Regarding depersonalization, the surgeons had mean score % of 30.7% and had a score of 39.6% for personal accomplishment. **Conclusions:** The study revealed that all included physicians had moderate levels of burnout. Personal accomplishment was the highest level of burnout recorded. Health education sessions and periodic training is required to improve surgeons coping strategies to overcome burnout.

**Keywords:** Burnout, burnout scale, occupations stress, self-destruction, surgeons, work stress

## Background

Health-related behavior in early life influences later risks for lifestyle-related disorders. It is therefore important to investigate health behaviors among young people. University students represent a major segment of the young adult population .

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Occupational burnout is thought to result from long-term, unresolvable, job stress. In 1974, Herbert Freudenberg became the first researcher to publish in a psychology-related journal, a paper that used the term burnout. The paper was based on his observations of the volunteer staff (including himself) at a free clinic for drug addicts: burnout by a set of symptoms that includes exhaustion resulting from work's excessive demands as well as physical symptoms such as headaches and sleeplessness, "quickness to anger," and closed thinking.<sup>[1,2]</sup> It has been defined by Maslach and Jackson<sup>[3]</sup> as "a syndrome of emotional exhaustion, depersonalization and reduced personal

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accomplishment that can occur among individuals who do 'people work' of some kind."

Burnout is known as result of long term exposing to stress.<sup>[4]</sup> Its more likely to be common in medical care workers.<sup>[5]</sup> There are some factors that may cause stress in physicians: nature of work, their training, their public image, their families and themselves.<sup>[6]</sup> The person who has burnout syndrome (BOS) seems like to have tiredness, low energy, nervousness, and mentally unstable.<sup>[7]</sup> BOS is associated with: medical errors, dissatisfaction of job, low productivity, and discomfort ability of medical staff working with this person.<sup>[8]</sup> Particularly, surgeons are frequently overworked with the demands of taking care of patients with fewer organizational resources. Burnout may include sleep troubles, moodiness, marital distress, alcohol and smoking abuse, tiredness, and also cardiovascular problems. Burnout gradually expands overtime and it is hard to be cured.<sup>[9]</sup> Increase susceptibility of burnout with long hours of working and difficulties in balancing between home and work.<sup>[10]</sup> Lack of quality in medical facilities and low income have important rule as well.<sup>[11]</sup> Workshops were established to decrease burnout at organizational and individual levels but it gave unclear results. Prevention and treatment of burnout is a hard issue that faces the medical community.<sup>[12]</sup> In US, the prevalence of burnout and satisfaction with work-life balance among physicians increased between 2011 and 2014.<sup>[13]</sup>

In this study, authors aimed to assess the exact prevalence of BOS among orthopedic surgeons in southern region of Saudi Arabia, which is known of its difficult landscape and high incidence of road traffic accidents and lack of resources equivalent to other region in Kingdom of Saudi Arabia among Southern Region Orthopedic Surgeons.

## Methodology

A descriptive cross-sectional survey was applied targeting all orthopedic surgeons in 12 hospitals all southern region, Saudi Arabia during the period from December 2018 to April 2019. All accessible orthopedic surgeons in the included hospitals were invited to participate in the survey after explaining the target and having oral consent. Data were collected using self-administered questionnaire that was developed by the researchers. The questionnaire included personal data for surgeons like their ages, gender, residence region, work data, and personal habits. Burnout was assessed using Maslach Burnout Inventory Scale.<sup>[14]</sup> The scale consists of 22 items pertaining to occupational burnout. The nine-item emotional exhaustion (EE) scale measures feelings of being emotionally overextended and exhausted at one's work. Higher scores correspond to greater experienced burnout. The five-item depersonalization (DP) scale measures an unfeeling and impersonal response toward recipients of one's service, care, treatment, or instruction. Higher scores correspond to greater degrees of experienced burnout. The eight-item personal accomplishment (PA) scale measures feelings of competence and successful achievement in one's work with people. Lower scores correspond to greater experienced burnout.

The Research Ethics Committee of College of Medicine, King Khalid University, Abha, Saudi Arabia approved this research activity on October 23, 2018 (REC#2018-05-36).

## Data analysis

After data were collected it was revised, coded, and fed to statistical software IBM SPSS version 20. All statistical analysis was done using two tailed tests and alpha error of 0.05. *P* value less than or equal to 0.05 was considered to be statistically significant. The discrete scores for each type of burn out were summed together to have the overall for each domain. Frequency and percent were used to describe the frequency distribution of each category for surgeons' data while mean with standard deviation described burnout types scores. Cross tables were used to describe burnout distribution according to surgeons' personal data.

## Results

A total sample of 107 orthopedic surgeons were included with their ages ranged from 25 to 65 years old with mean age of  $38.1 \pm 8.9$  years. About 94% of the surgeons were males and 43.9% were Saudi. Exact 41.1% of the surgeons had experience years up to 5 years and 33.6% were of experience exceeded 10 years. Residents constituted 34.6% of the surgeons while 31.8% were consultants. Regarding children they had, 60.5% had more than three children. Smoking was recorded among 24.3% of the surgeons while 69.2% were nonsmokers and only three surgeons use alcoholic beverages [Table 1].

As for burnout, Table 2 demonstrates burnout details among surgeons. Considering emotional exhaustion, 73.8% of the surgeons felt emotionally drained from work, 88.8% felt that they were used up at the end of the workday. Frustration from job was recorded by some degree among 87.6% of the surgeons and 79.4% of them felt fatigued when they get up in the morning and have to face another day on the job. Considering depersonalization, 82.2% of the surgeons felt they were burned out from their work and 79.4% of them felt exhilarated after working closely with patients. Patient blame for some services was recorded by 84.1% of the surgeons while 91.1% can deal very effectively with the problems of patients. With regard to personal accomplishment, 93.3% of surgeons feel that they perform very hard job and 69.2% of the surgeons recorded that working with people all day is really a strain for them. About 61% of the surgeons feel like they are at the end of their rope and 48.6% of them treat some patients as if they were impersonal objects. Generally, the surgeons recorded mean score for emotional exhaustion of 18.9 points out of 54 with mean score% of 35.1% which is moderate value. Regarding depersonalization, the surgeons had mean score % of 30.7% (9.2 out of 21 points) which is also considered moderate level and had a score of 39.6% for personal accomplishment (19.1 out of 48 points) [Table 3].

Finally, on relating burnout level with surgeons' characteristics [Table 4], it was clear that there were discrepancy among surgeons

**Table 1: Personal data of Southern Region Orthopedic Surgeons, Saudi Arabia**

Personal data	No	Percentage	
Age in years	<40 years	58	54.2%
	40-	32	29.9%
	50+	17	15.9%
Gender	Male	101	94.4%
	Female	6	5.6%
Nationality	Saudi	47	43.9%
	Non-Saudi	60	56.1%
Residence	Aseer region	42	39.3%
	Jazan / Najran	37	34.6%
	Bisha / Albaha	28	26.2%
Years of experience	1-5	44	41.1%
	6-10	27	25.2%
	>10 years	36	33.6%
Job description	Resident	37	34.6%
	Specialist	36	33.6%
	Consultant	34	31.8%
Marital status	Single	26	24.3%
	Married	78	72.9%
	Divorced	3	2.8%
Number of children	None	8	9.9%
	1-2	24	29.6%
	3-5	49	60.5%
Smoking status	Smoker	26	24.3%
	Non-smoker	74	69.2%
	Ex-smoker	7	6.5%
Use of alcoholic beverage	No	104	97.2%
	Yes	3	2.8%

according to their job title as residents had mean score of 21.6 for emotional exhaustion compared to 16.1 for consultants. Also residents had mean score for depersonalization of 10.3 compared to 8.4 for consultant and mean score for personal accomplishment of 20.6 compared to 18.5 for consultants. Also experience years were considerable determinate for burnout as those who had experience for less than 5 years recorded higher burnout scores than those who had long experience years of 10 years or more (20.7 vs. 15.6, 9.5 vs. 7.9 for EE and DP, respectively). EE was higher among divorced surgeons than single (28 and 19.8 points, respectively). Surgeons who use alcoholic beverages recorded mean score of 23 points for EE compared to 18.7 for those who did not and had mean score of 13.7 for DP compared to 9.1 for others who did not. Also they had mean score of 20.3 for PA compared to 19 points for those who did not.

## Discussion

Recently the medical field in general, and specially surgery, is faced with a problem that is severely affecting both trainees and practicing physicians. Surgeons work and training are stressful endeavors. Surgeons' duties are hard and for long duration. They deal regularly with life-and-death situations daily, and make substantial personal sacrifices to as their job description. These circumstances of surgical field, besides the rigors and

length of training for this profession, attract individuals of a particular character and determination. These individuals share an unwritten but understood code of rules, norms, and expectations.<sup>[4,15-17]</sup>

The current study aimed to assess the magnitude of burnout among orthopedic surgeons in southern region of Saudi Arabia which is a very big and wide region serving millions of Saudi population. Also the researchers aimed to identify the pattern of burnout recorded among surveyed surgeons. The current study included all grades of surgeons as residents with the highest work load due to on-call duties in ER with specialists and consultants.

The study revealed that about one-third of the surveyed physicians had burnout and personal accomplishment was the highest followed with emotional exhaustion and depersonalization. These findings give an indicator regarding the area of burnout which is mainly focused in coping to deal with patients and emotional well-being of the surveyed staff. More than two-thirds of the physicians can deal very effectively with the problems of my patients and can easily understand how patients feel about things which on the expense of their psychological tolerance making them usually under stress. Also more than half of the physicians feel working too hard in their job which another stress area is ending with high burnout to fulfill patients' expectations. On asking directly about burnout, about 19% of the physicians recorded they were burned out daily and 17% deal hardly with their patients. Regarding frustration from job, one-third of the physicians recorded high rate of frustration and one quarter feel that that this job is hardening them emotionally.

Positive findings were that more than two-thirds of the physicians can deal very effectively with the problems of their patients. Also more than 60% of the surgeons recorded their ability to positively influencing other people's lives through work. Also about half of the sampled surgeons recorded that they accomplished many worthwhile things in this job. Burnout was recorded higher among female residents of Saudi nationality and low experience. Also smokers were more burned out than others and also those who use alcoholic beverages.

These findings were concordant with studies involving samples of surgeons from surgical subspecialties and graduates of surgical training programs which recorded that burnout rates among surgeons range from 30% to 38%. These findings revealed that a substantial number of colleagues are struggling with personal and professional distress at a level that should be of concern to all surgeons.<sup>[18-20]</sup> Another study was done by Hamdan *et al.* 2017<sup>[21]</sup> on Palestinian health care workers in emergency department. The study revealed that high levels of burnout among EDs workers; 64.0% suffered from high emotional exhaustion, 38.1% from high depersonalization, and 34.6% from low personal accomplishment. In addition, high levels of emotional exhaustion (72.3%). In Saudi Arabia, Alwaleed Alyamani *et al.* 2018<sup>[22]</sup> conducted a study to assess burnout among medical and surgical residents at King Abdulaziz Medical City. The

**Table 2: Burnout among Southern Region Orthopedic Surgeons, Saudi Arabia**

Burnout domain	Never		A few times a year or less		A few times a month		A few times a week		Every day	
	No	Percentage	No	Percentage	No	Percentage	No	Percentage	No	Percentage
	Emotional Exhaustion									
I feel emotionally drained from my work	28	26.2%	39	36.4%	26	24.3%	12	11.2%	2	1.9%
I feel used up at the end of the workday	12	11.2%	29	27.1%	43	40.2%	19	17.8%	4	3.7%
I feel fatigued when I get up in the morning and have to face another day on the job.	22	20.6%	20	18.7%	42	39.3%	16	15.0%	7	6.5%
I feel frustrated by my job.	24	22.4%	25	23.4%	38	35.5%	16	15.0%	4	3.7%
Working with people directly puts too much stress on me.	21	19.6%	20	18.7%	35	32.7%	15	14.0%	16	15.0%
I feel very energetic.	9	8.4%	6	5.6%	35	32.7%	30	28.0%	27	25.2%
I can easily create a relaxed atmosphere with my patients.	3	2.8%	5	4.7%	19	17.8%	38	35.5%	42	39.3%
I have accomplished many worthwhile things in this job.	8	7.5%	19	17.8%	32	29.9%	31	29.0%	17	15.9%
I worry that this job is hardening me emotionally.	21	19.6%	24	22.4%	34	31.8%	23	21.5%	5	4.7%
Personal Accomplishment										
Working with people all day is really a strain for me.	33	30.8%	21	19.6%	32	29.9%	17	15.9%	4	3.7%
I feel I'm working too hard on my job.	5	4.7%	15	14.0%	26	24.3%	37	34.6%	24	22.4%
I feel like I'm at the end of my rope	41	38.3%	21	19.6%	33	30.8%	10	9.3%	2	1.9%
I feel I'm positively influencing other people's lives through my work.	7	6.5%	14	13.1%	18	16.8%	35	32.7%	33	30.8%
In my work, I deal with emotional problems very calmly.	10	9.3%	7	6.5%	28	26.2%	22	20.6%	40	37.4%
I feel I treat some patients as if they were impersonal objects	55	51.4%	9	8.4%	21	19.6%	16	15.0%	6	5.6%
I've become more callous toward people since I took this job.	39	36.4%	21	19.6%	28	26.2%	15	14.0%	4	3.7%
I don't really care what happens to some patients.	79	73.8%	14	13.1%	5	4.7%	5	4.7%	4	3.7%
Depersonalization										
I can easily understand how my patients feel about things.	6	5.6%	7	6.5%	19	17.8%	21	19.6%	54	50.5%
I deal very effectively with the problems of my patients.	1	.9%	6	5.6%	16	15.0%	20	18.7%	64	59.8%
I feel burned out from my work	19	17.8%	24	22.4%	42	39.3%	20	18.7%	2	1.9%
I feel exhilarated after working closely with my patients	22	20.6%	18	16.8%	40	37.4%	16	15.0%	11	10.3%
I feel patients blame me for some of their problems.	17	15.9%	44	41.1%	28	26.2%	12	11.2%	6	5.6%

**Table 3: Overall burnout among Southern Region Orthopedic Surgeons, Saudi Arabia**

Burnout domains	Actual range	Range	Mean	SD	Score %
Emotional Exhaustion	0-54	1-50	18.9	9.1	35.1%
Depersonalization	0-30	0-21	9.2	5.2	30.7%
Personal Accomplishment	0-48	1-40	19.1	6.5	39.6%

Score %=(actual score-minimum score / maximum score)\*100

study findings were total 51% of the participants showed high depersonalization, 31.50% exhibited low personal achievements, and 12.50% with high emotional exhaustion.

The recorded considerable level of burnout among the study surgeons is flag sign for further problems and errors. Efforts to identify at-risk population were warranted and interventions to prevent burnout like counseling and social skills training were encouraged.

## Conclusions and Recommendations

In conclusion, the study revealed that all included physicians had moderate levels of different types of burnout especially residents, young aged surgeons, females, and divorced staff. Personal accomplishment was the highest level of burnout recorded followed with emotional exhaustion which is more related to physicians' mental wellbeing. Health education sessions and periodic training is required to improve surgeons coping strategies to overcome burnout and reduce its destructive consequences.

### Ethical considerations

The research was approved by the Ethics and Research Committee of the College of Medicine of King Khalid University.

### Financial support and sponsorship

Nil.



**Table 4: Distribution of different burnout scores according to orthopedics personal data, Saudi Arabia**

Factor		Emotional Exhaustion		Depersonalization		Personal Accomplishment	
		Mean	SD	Mean	SD	Mean	SD
Age in years	< 40 years	21.41	8.63	10.24	5.19	19.84	6.73
	40-	18.72	7.74	8.78	3.87	17.66	5.92
	50+	10.47	8.25	6.65	6.52	19.18	6.64
Gender	Male	18.69	9.18	9.18	5.26	19.12	6.59
	Female	21.83	7.57	10.17	4.12	18.50	4.89
Nationality	Saudi	19.83	8.05	9.66	5.32	19.72	5.19
	Non-Saudi	18.12	9.84	8.90	5.11	18.58	7.36
Residence	Aseer region	20.14	10.03	10.05	5.70	19.12	7.26
	Jazan / Najran	17.30	7.71	7.95	5.02	17.14	5.40
	Bisha / Albaha	19.04	9.31	9.71	4.40	21.61	5.91
Years of experience	1-5	20.77	8.49	9.48	5.27	19.43	6.81
	6-10	20.11	10.50	10.52	4.40	18.00	7.53
	> 10 years	15.61	7.96	7.97	5.49	19.47	5.23
Job description	Resident	21.57	9.44	10.30	5.30	20.62	6.13
	specialist	18.64	9.24	8.89	4.92	18.08	7.25
	Consultant	16.18	7.88	8.44	5.32	18.47	5.88
Marital status	Single	19.81	10.49	9.77	5.60	20.23	6.68
	Married	18.21	8.59	8.99	5.05	18.65	6.52
	Divorced	28.00	3.61	11.00	6.56	20.33	3.79
Number of children	None	21.13	9.83	7.63	5.37	19.25	5.50
	1-2	21.75	9.31	11.46	5.48	20.13	6.33
	3-5	16.59	7.68	8.12	4.50	17.94	6.61
Smoking status	smoker	21.96	9.15	10.77	5.23	21.42	5.05
	Non-smoker	17.86	9.07	8.72	5.22	18.18	6.81
	X-smoker	18.00	7.62	9.00	4.12	20.00	6.30
Use of alcoholic beverage	No	18.75	9.06	9.11	5.18	19.05	6.56
	Yes	23.00	11.27	13.67	4.16	20.33	3.79

## Conflicts of interest

There are no conflicts of interest.

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