

# Emotional Intelligence and Burnout in Plastic Surgery Residents: Is There a Relationship?

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**Background:** The specific role of emotional intelligence (EI) in the field of plastic surgery has not been investigated. We aim to investigate the relationship between EI and the individual components of burnout among plastic surgery residents in Saudi Arabia.

**Methods:** In this cross-sectional study, all plastic surgery residents (n = 37) in Riyadh, Saudi Arabia, were invited to participate in a questionnaire based study in March 2018. The survey contained a validated measure of burnout (Maslach Burnout Inventory-Human Services Survey), validated measure of EI (Trait Emotional Intelligence Questionnaire-Short Form), and evaluated residents' demographics, professional and personal risk factors, and career satisfaction.

**Results:** The overall rate of high burnout was 37.9%, with 72.4% residents reporting high level of emotional exhaustion (EE), 41% reporting high depersonalization (DP) and 41% reporting low sense of personal accomplishment (PA). EI has shown to have a significant negative relationship with EE (95% confidence interval CI, -9.061 to -1.374;  $P = 0.010$ ), DP (95% CI, -5.747 to -1.974;  $P < 0.001$ ), and a significant positive correlation with PA (95% CI, 1.398-5.439;  $P = 0.002$ ). Significant risk factors for burnout included dissatisfaction with plastic surgery as a career choice, dissatisfaction with income, and dissatisfaction with the role in the operating room ( $P < 0.05$ ).

**Conclusions:** We found a positive correlation between higher levels of EI and sense of personal achievement, whereas a negative correlation was observed between higher level of EI and EE and DP among the residents in this study. Plastic surgery residents who are satisfied with their salary have lower EE and DP. Residents who are satisfied with their role in the operating room have a better sense of PA. (*Plast Reconstr Surg Glob Open* 2019;7:e2057; doi: 10.1097/GOX.0000000000002057; Published online 23 May 2019.)

## INTRODUCTION

The path toward medical training and practicing surgery is a stressful endeavor,<sup>1</sup> and studies have indicated that surgeons from surgical subspecialties and surgical training

programs have burnout rates of 30%–38%.<sup>2</sup> Burnout is defined as a syndrome characterized by emotional exhaustion (EE), depersonalization (DP), and a decreased sense of personal accomplishment (PA),<sup>3–5</sup> affecting professions where there are constant work demands and interactions with people with physical and emotional needs. Maslach et al.<sup>6</sup> have defined burnout among healthcare providers as a psychological process, whereby the healthcare providers are overwhelmed and frustrated by unforeseen stressors related to their jobs while attempting to positively impact the lives of their patients. Research also indicates that for a substantial proportion of surgeons, experiencing burnout and distress can have serious negative impact on their well-being and can affect their families, colleagues, and patients.

Two common symptoms of burnout are treating patients and colleagues as objects rather than human beings and feeling emotionally depleted. Burnout symptoms include physical exhaustion, poor judgment, cynicism, guilt, feelings of ineffectiveness, and a sense of DP in relation-

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ships with coworkers or patients.<sup>4,7</sup> The identified risk factors for burnout include work hours, on-call burden, subspecialty choice, control over work schedule, reimbursement schedule, work–family stressors, surgeons age, and sex.<sup>8–10</sup>

Although burnout among several surgical specialties has been investigated, burnout among plastic surgery residents in Saudi Arabia is only being started to be evaluated, and a study investigating depressive symptoms among plastic surgery residents in Saudi Arabia<sup>11</sup> has reported depressive symptoms rates of 70.6%.

In the present study, we refer to an important concept of emotional intelligence (EI) and examine the relationships among EI, burnout components rates, and job satisfaction among plastic surgery residents in Saudi Arabia. EI is understood to be a flexible trait that can be learned<sup>12,13</sup> and has been defined as the awareness of one's emotions and thoughts and the ability to use this awareness to guide future actions and thoughts.<sup>14,15</sup> Past research indicates significantly higher levels of EI in surgical trainees compared with that of the average population.<sup>16,17</sup>

Furthermore, it has been shown that EI in medical residents and internists is correlated with lower incidences of burnout and higher degree of job satisfaction, underlying its importance in coping with the stress associated with medical profession.<sup>18</sup>

The impact of EI may differ in surgical training, which distinctly differs from other specialties in the type of stressors and emphasis on technical performance. To better understand the role of EI in surgical training, we examined the relationship between EI and measures of surgical training performance and job satisfaction.

The theory of EI assumes that individuals with high EI have better interpersonal and communication skills. The importance of EI in physicians has attracted attention as researchers begin to focus on the relationship of EI to retention, promotion, and productivity among academic physicians.<sup>19</sup> The aim of this study is to investigate the relationship between emotional intelligence and the individual components of burnout among plastic surgery residents in Saudi Arabia.

## METHODS

In March 2018, after obtaining approval from the Institutional Review Board of the medical research unit, college of medicine, Al Imam Mohammad ibn Saud Islamic University, all residents ( $n = 37$ ) enrolled in the Saudi Plastic Surgery Board Training Program in Riyadh, Kingdom of Saudi Arabia, were invited to participate in a cross-sectional, questionnaire-based study. The questionnaire was distributed to the residents during the break from their weekly educational activities. Purpose of this study was explained to the participants before obtaining the informed consent.

The questionnaire used in this study included demographic variables [age, sex, marital status and current residential-level “postgraduate year (PGY)”], general health variables (tobacco use, days of exercise/wk, and hours of sleep/d), and work-related variables (number

of on-call/mo, hours working in the hospital/d, number of clinics/wk, number of operations/wk, and number of patients under daily care). Job salary satisfaction, satisfaction with plastic surgery as a career, satisfaction of the residents' role in the operating room, and satisfaction of the surgical skills were measured using a 5-point Likert scale, ranging from 1 = very satisfied to 5 = very unsatisfied. The last 2 parts of the survey included previously validated scales. Those are the Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF)<sup>20</sup> and the Maslach Burnout Inventory-Human Services Survey (MBI-HSS).<sup>21</sup> The TEIQue-SF is an abbreviated version of the TEIQue that includes 30 questions as against 153 questions in the full TEIQue. Analysis of the TEIQue-SF results in 4 factor scores (well-being, self-control, sociability, and emotionality), and one global score (EI). Questions are answered using a 7-point Likert scale that ranges from 1 = completely disagree to 7 = completely agree. The Maslach Burnout Inventory (MBI-HSS) was used to measure the burnout. The MBI-HSS consists of 22 questions assessing 3 domains: EE (9 questions), DP (5 questions), and the sense of PA (8 questions). High scores in EE and DP are associated with higher burnout, whereas high scores in PA are associated with lower burnout. High EE was identified as EE score  $>26$ , whereas high DP was identified as DP score  $>12$ . Low PA was identified as a PA score lower than 32. High risk of burnout was defined as coexisting high EE and high DP.

Statistical analysis was performed using Statistical Package for Social Sciences (SPSS) version 24.0 (IBM Corp., Armonk, NY). Plots were constructed using R studio version 1.3 (RStudio, Inc., Boston, MA). Categorical data such as age and sex were summarized using counts and percentages. Survey scores and satisfaction with work were summarized using means and SDs. Unpaired Student's *t* test was initially used to assess the association between demographic variables (categorical) with the various burnout components (EE, DP, and PA) and EI. The association of various components of EI and the total EI score with burnout was assessed using Pearson's correlation. Multivariate analysis (multiple linear regression) was performed to determine the independent predictors of EE, PA, DP, and overall burnout. A forward approach was used throughout the analysis. Three models were developed, with each of the 3 components of MBI-HSS as the dependent variable in one of these models. Only factors that were associated with burnout in the initial univariate step were included in the linear regression model. Model fit was assessed using the coefficient of determination ( $R^2$ ). Significance of the coefficients was assessed using Student's *t* test. *P* values less than 0.05 were considered statistically significant. The prevalence of EE among residents and healthcare providers in Saudi Arabia ranged from 40% to 60% and the prevalence of DP ranged from 30% to 50%.<sup>22</sup> We used the midpoints (50% and 40%, respectively) for power calculations. We hypothesized that the prevalence of EE among R4–6 residents would be 25% higher compared with R1–3 residents. The effect sizes (odds ratio) produced using such calculations were 2.8 and 3 for EE and DP, respectively. G-power software was used for sample size calculation. Sample size calculation was performed a priori. Sample

size calculation was based on the assumption of inequality of 2 independent groups (inequality of 2 independent proportions). Two-tailed hypothesis testing using the estimated effect sizes showed that 128 residents (based on 1:1 allocation ratio) are needed so that such observed effect is statistically significant at the 0.05 significance levels 80% of the times (80% powers). Therefore, it was not possible to recruit such number, because the number of plastic surgery residents in Riyadh, Saudi Arabia, is only 37. Accordingly, we decided to include all of them if possible. Moreover, the sample size included in current study may not be sufficient to detect such an effect size.

## RESULTS

Out of the 37 questionnaires that were distributed to all the residents, 31 questionnaires were returned (response rate = 83.8%). Two responses were excluded due to incompleteness of the questionnaire, yielding 29 completed questionnaires.

Males represented 55.2% ( $n = 16$ ) of the study sample. The majority of residents included in this study were unmarried (79.3%; 23). Residents 25–27 years of age and 28–30 years each represented (41.4%) of the study sample. Mean number of on-call/mo was  $6.66 \pm 1.32$  (range 4–10). Other relevant demographic variables are summarized in Table 1.

The participants' satisfaction with work-related aspects is indicated in Figure 1. The majority of the participants were satisfied with their choice of career working as a plas-

tic surgeon (75.8%), with 34.4% unsatisfied with their job salary.

The mean EE score was  $31.24 \pm 10.82$ , DP score was  $11.72 \pm 6.25$ , and PA score was  $33.97 \pm 6.55$ . Table 2 shows that 72.4% ( $n = 21$ ) of plastic surgery residents suffered from high EE and 41.4% ( $n = 12$ ) were found to be in high DP status, whereas 41.4% ( $n = 12$ ) had a low sense of PA. Overall, 11 (37.9%) of the study participants were found to have a high burnout status.

Statistical analysis using Student's *t* test revealed a significantly higher EI among individuals who exercised 1 day or more per week, when compared with the participants who did not exercise at all ( $P = 0.047$ ). Other categorical variables (age, sex, marital status, residency level, smoking, and hours of sleep/d) were not significantly associated with EI ( $P > 0.005$ ). Satisfaction with job salary, plastic surgery as a career, role in the operating room, and surgical skills were also not significantly associated with EI.

Only smoking and exercise were significantly associated with DP ( $P < 0.05$ ). DP was significantly lower in nonsmokers compared with smokers ( $P = 0.012$ ) and was lower in the participants who exercised 1 day or more per week compared with those who did not exercise ( $P = 0.031$ ). Age was the only variable associated with PA, where PA was significantly higher in older residents ( $\geq 28$  years) compared with younger residents ( $< 28$  years;  $P = 0.038$ ). None of the other categorical variables was significantly associated with EE (Table 3).

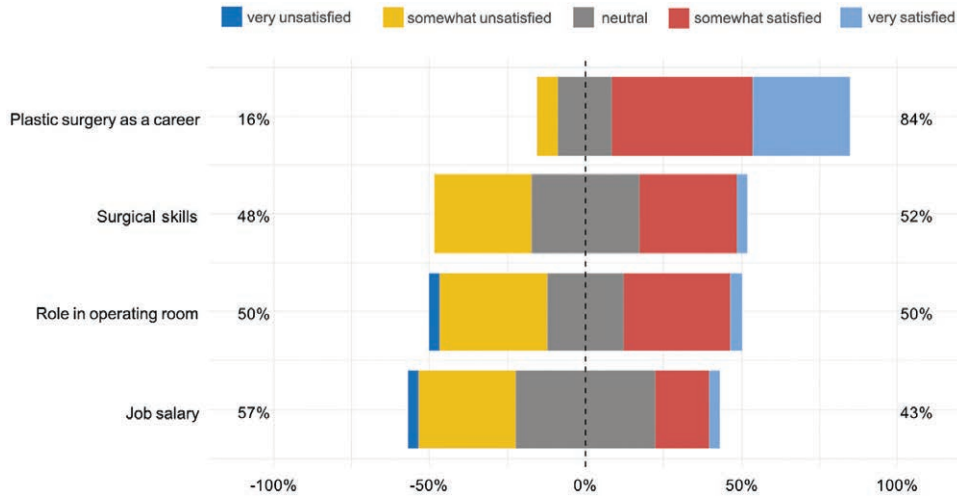
Only average number of clinics/wk was significantly associated with PA ( $r = -0.456$ ,  $P = 0.03$ ), indicating that higher number of clinics/wk is associated with a lower sense of PA. Average number of working hours, clinics, operations, and patients under daily care were not significantly associated with EI, EE, or DP.

Correlation of satisfaction with work-related aspects with burnout components (EE, DP, and PA) is shown in Table 4. Results show that there is a negative correlation between job salary satisfaction with EE and DP ( $r = -0.411$ ,  $P = 0.027$ ) and ( $r = -0.445$ ,  $P = 0.016$ ), respectively, implying that the residents who were satisfied with their job salary were more likely to have a lower EE and DP scores compared with the participants who were less satisfied with their salary. Satisfaction with plastic surgery as a career was negatively associated with EE ( $r = -0.488$ ,  $P = 0.007$ ). Two factors showed a positive correlation with PA, satisfaction with the role in the operating room ( $r = 0.578$ ,  $P = 0.001$ ) and satisfaction with surgical skills ( $r = 0.414$ ,  $P = 0.026$ ).

Correlation between EI and its components with burnout components is shown in Table 5. EI was significantly and negatively correlated with DP ( $r = -0.547$ ,  $P = 0.002$ ) and EE ( $r = -0.484$ ,  $P = 0.008$ ). A statistically significant positive correlation was found between PA and EI ( $r = 0.515$ ,  $P = 0.004$ ). These results are illustrated in a scatter plot in Figure 2. Statistically significant negative correlation was found between emotionality with DP ( $r = -0.559$ ,  $P = 0.002$ ) and EE ( $r = -0.530$ ,  $P = 0.003$ ), respectively. Well-being was negatively correlated with DP ( $r = -0.495$ ,  $P = 0.006$ ) and positively correlated with PA ( $r = 0.370$ ,  $P = 0.048$ ).

**Table 1. Demographic Variables of the Plastic Surgery Residents (n = 29)**

		n (%)
Age	25–27	12 (41.4)
	28–30	12 (41.4)
	31–33	5 (17.2)
Sex	Female	13 (44.8)
	Male	16 (55.2)
Current level of residency program	PGY1 (R1)	4 (13.8)
	PGY2 (R2)	5 (17.2)
	PGY3 (R3)	5 (17.2)
	PGY4 (R4)	4 (13.8)
	PGY5 (R5)	6 (20.7)
	PGY6 (R6)	5 (17.2)
Marital status	Married	6 (20.7)
	Unmarried	23 (79.3)
Smoker	No	17 (58.6)
	Yes	12 (41.4)
Average numbers of days of exercise/wk	Never	13 (44.8)
	1	2 (6.9)
	2	5 (17.2)
	3	6 (20.7)
	4 or more	3 (10.3)
Average hours of sleep/d	5	3 (10.3)
	6	13 (44.8)
	7	13 (44.8)
	<b>Mean (range)</b>	<b>SD</b>
No. on-call/mo	6.66 (4–10)	1.32
No. hours working in the hospital/d “on-calls not included”	10.69 (8–13)	1.07
No. clinics/wk	3.31 (0–6)	1.17
No. operations/wk	3.90 (2–10)	1.88
No. patients under daily care	5.86 (3–10)	2



**Fig. 1.** Plastic surgery residents' satisfaction with work-related aspects.

**Table 2. Descriptive Statistics for Various Scales.**

	Mean	SD	High n (%)
MBI-HSS			
Emotional exhaustion	31.24	10.82	21 (72.4%)
Depersonalization	11.72	6.25	12 (41.4%)
Personal accomplishment	33.97	6.55	17 (58.6%)
Overall burnout			11 (37.9%)

Multivariate linear regression test was performed to assess the independent predictors of burnout components EE, PA, and DP (Table 6). Results show that the participants who were satisfied with their job salary were less likely to suffer from EE (95% confidence interval, CI, -8.108 to 0.770;  $P = 0.02$ ). Similar association was found between satisfaction with the career choice of plastic surgery (95% CI, -7.627 to -0.138;  $P = 0.043$ ). There was a statistically significant negative correlation between EE and EI (95%

CI, -9.061 to -1.374;  $P = 0.01$ ). Participants who were satisfied with their role in the operating room were more likely to have a higher sense of PA (95% CI, 0.720-4.225;  $P = 0.008$ ), number of clinics/wk is negatively correlated with PA (95% CI, -3.711 to -0.807;  $P = 0.004$ ). EI was positively and significantly associated with PA (95% CI, 1.398-5.439;  $P = 0.002$ ). Job salary satisfaction was negatively associated with DP (95% CI, -4.625 to -0.910;  $P = 0.005$ ). Nonsmokers in the present study had a lower DP status compared with smokers (95% CI, 1.014-7.522;  $P = 0.012$ ). EI was negatively and significantly correlated with DP (95% CI, -5.747 to -1.974;  $P < 0.001$ )

## DISCUSSION

The negative impact of burnout across medical and surgical specialties necessitates an evaluation of the influence of burnout on plastic surgery residents. In the pres-

**Table 3. Association of Categorical Variables with Burnout Components**

	EE			DP			PA		
	Mean	SD	P	Mean	SD	P	Mean	SD	P
Age									
<28	30.75	7.33	0.827	9.83	5.77	0.175	31.00	5.03	0.038*
≥28	31.59	12.95		13.06	6.40		36.06	6.82	
Sex									
Female	32.23	10.67	0.665	10.92	6.79	0.544	33.00	6.23	0.485
Male	30.44	11.22		12.38	5.92		34.75	6.90	
Marital status									
Married	37.17	8.06	0.135	13.50	6.25	0.445	37.17	9.79	0.37
Unmarried	29.70	11.06		11.26	6.30		33.13	5.42	
Residency level									
Junior (R1-R3)	30.21	10.14	0.63	10.29	6.08	0.238	31.64	5.21	0.064
Senior (R4-R6)	32.20	11.69		13.07	6.31		36.13	7.09	
Smoker									
No	28.71	10.81	0.136	9.35	6.47	0.012*	33.47	6.41	0.637
Yes	34.83	10.21		15.08	4.19		34.67	6.97	
Exercise									
Never	35.46	9.85	0.057	14.46	5.71	0.031*	32.31	6.92	0.226
1+ d	27.81	10.63		9.50	5.92		35.31	6.13	
Sleep									
≤6	32.81	11.69	0.396	12.50	6.77	0.468	33.88	6.17	0.936
>6	29.31	9.75		10.77	5.66		34.08	7.25	

\*Statistical analysis was performed using Student's *t* test.



**Table 4. Correlation of Satisfaction with Burnout Components (EE, DP, and PA)**

		EE	DP	PA
Job salary satisfaction	<i>r</i>	-0.411	-0.445	0.086
	<i>P</i>	0.027*	0.016*	0.656
Satisfaction with plastic surgery as a career	<i>r</i>	-0.488	-0.239	0.270
	<i>P</i>	0.007*	0.213	0.156
Satisfaction with your role in the operating room	<i>r</i>	-0.287	-0.046	0.578
	<i>P</i>	0.131	0.814	0.001†
Satisfaction with surgical skills	<i>r</i>	-0.118	-0.048	0.414
	<i>P</i>	0.544	0.804	0.026*

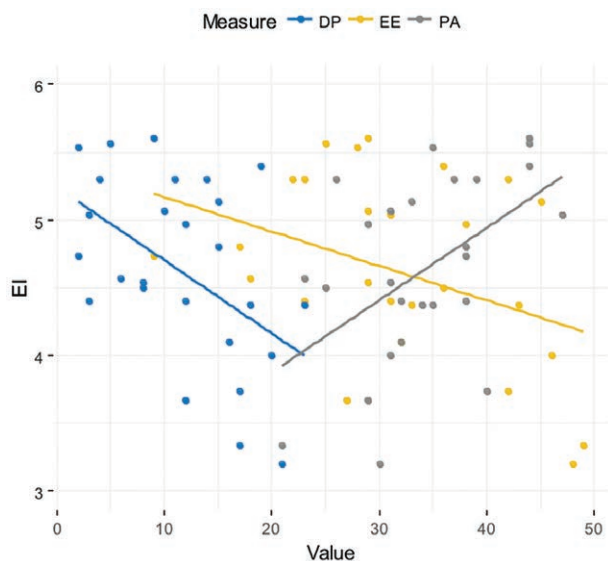
\*Correlation is significant at the 0.05 level (2-tailed).

†Correlation is significant at the 0.01 level (2-tailed).

**Table 5. Correlation of EI and Its Components with Burnout Components Using Pearson’s Correlation**

Burnout		EI				
		EI	Well-being	Self-control	Emotionality	Sociability
EE	<i>r</i>	-0.484*	-0.335	-0.460†	-0.530*	-0.263
	<i>P</i>	0.008	0.076	0.012	0.003	0.169
DP	<i>r</i>	-0.547*	-0.495*	-0.413†	-0.559*	-0.443†
	<i>P</i>	0.002	0.006	0.026	0.002	0.016
PA	<i>r</i>	0.515*	0.370†	0.468†	0.298	0.408†
	<i>P</i>	0.004	0.048	0.010	0.116	0.028

†Correlation is significant at the 0.05 level (2-tailed).



**Fig. 2.** Correlation among various burnout measures with EI.

ent study, we quantify the incidence of burnout in the field of plastic surgery among the residents in Saudi Arabia and evaluate burnout risk factors and their relation to EI to gain knowledge regarding the extent of burnout in an effort to minimize its occurrence and improve career satisfaction rates for the future plastic surgeons.

One of the key findings, although using a small sample size, is that the burnout rates in plastic surgery residents in Saudi Arabia are similar (38%) to the previously reported burnout rates among medical professionals (30%–38%)<sup>8</sup> in other world regions. Although our survey population is small and includes plastic surgery residents and the

**Table 6. Predictors of High Scores on the Burnout Components EE, DP, and PA**

	<i>B</i>	<i>P</i>	95% CI
Emotional exhaustion			
Job salary satisfaction	-4.439	0.020	-8.108 to -0.770
Satisfaction with plastic surgery as a career	-3.883	0.043	-7.627 to -0.138
EI total score	-5.217	0.010	-9.061 to -1.374
Satisfaction with your role in the operating room	2.472	0.008	0.720 to 4.225
Personal accomplishment			
EI total score	3.418	0.002	1.398 to 5.439
Average number of clinics/week	-2.259	0.004	-3.711 to -0.807
EI total score	-3.861	<0.001	-5.747 to -1.974
Depersonalization			
Job salary satisfaction	-2.768	0.005	-4.625 to -0.910
Smoker	4.268	0.012	1.014 to 7.522

\*\*Correlation is significant at the 0.01 level (2-tailed).

population subset is completely different to the above reported study by Qureshi et al. reporting the burnout rates among plastic surgeons in the United States (30%),<sup>23</sup> it still provides a valuable idea on the burnout rates in plastic surgery field.

The analysis of correlation of EI with individual components of burnout also indicated that EI was negatively correlated with EE and DP but positively correlated with PA, reinforcing the positive impact of EI. The theory of EI suggests that individuals with high EI tend to be better at interpersonal relationships and are better communicators,<sup>19</sup> and a study on dental undergraduates has shown that EI has a positive impact on decreasing work-related stress among dental undergraduates.<sup>24</sup> EE and DP reflect the stress dimension of burnout and encompass the feelings of hopelessness, loneliness, depression, anger, impatience and irritability and decreased PA.<sup>25</sup> As medical residents are stressed due to extreme study and workload, it is plausible that EE is a manifestation of high stress levels due to multitasking of learning and practical handling of patients, resulting in higher EE and DP. On the other hand, those with higher EI can better manage work-related stress and therefore may have negative correlation with EE and DP. Those with higher EI tend to adapt coping mechanisms such as problem-solving and stress management, which can eventually result in decreased stress and anxiety in everyday life situations and a positive correlation with higher PA.

In our study, high levels of EE were experienced by 72.4% of the plastic surgery residents and high level of DP by 41.4% of the sample. These figures are much higher than those reported for a national survey on French plastic surgeons, where a total of 13.5% and 25% of residents scored highly on the high-level EE burnout subscales and DP, respectively. In our study, low-level personal achievement was reported by 41.4% of the sample population as against 48.1% in the French national survey.<sup>26</sup>

A plastic surgery resident with higher EI might be better equipped to manage workplace stress and therefore EI plays a protective role in reducing burnout, as has been shown by numerous studies in the past.<sup>19,27</sup> In accordance with previous research, we also found significant associations between EI and burnout, and job satisfaction.<sup>28</sup>

Higher EI was a predictor of lower EE among plastic surgery residents. Moreover, satisfaction with career choice as a plastic surgeon was associated with lower EE and satisfaction with income was found to be a predictor of lower likelihood of experiencing DP. Like in our study, Streu et al.<sup>29</sup> found no significant correlation between rates of burnout in plastic surgeons with sex, which in part is in agreement with the report by Qureshi et al.<sup>23</sup> In another study on nurses in Malaysia, it was observed that the EI affects the quality of care provided by nurses.<sup>30</sup>

Multivariate analysis on factors predicting various burnout components revealed that satisfaction with job salary and satisfaction with the career choice of plastic surgery was negatively correlated with EE and DP. Interestingly, smoking and exercise among plastic surgery residents were found to be one of the predictors of DP among plastic surgery residents. Although smoking had a positive correlation with higher DP, exercising once a week was associated with lower DP rates among plastic surgery residents and may impact the levels of burnout. This is consistent with previous studies showing that regular exercise is one of the most important factors in protecting from burnout.<sup>31,32</sup>

In regard to smoking, it is known from the past research that stressed individuals are more likely to indulge in adverse lifestyle behaviors such as smoking and alcohol consumption.<sup>33</sup> It is also known that excessive exposure to stressors can result in the development of burnout symptoms, resulting in DP.<sup>34</sup> It is plausible that extreme work stress results in the consumption of nicotine and contributes to DP, although it is difficult to establish a direct cause and effect relationship, we report a correlation which may be contributed by the subset residents who were extremely stressed, displaying symptoms of burnout and therefore DP and who consumed nicotine to relieve stress.

In conclusion, our study provides valuable information on burnout rates and their relationship with EI among plastic surgery residents in Saudi Arabia and the factors that can predict the incidence of burnout. This understanding of the interplay between job and salary satisfaction with the components of burnout and the individual responsibilities in the operating room with the sense of PA can help address the root causes of burnout among plastic surgery residents in Saudi Arabia.

The small sample size is one of the limitation of this study. The total number of residents in Saudi Arabia is 43. Thirty-seven residents in Riyadh and 6 residents in Jeddah. The Saudi Plastic Surgery Board Training Program accepts approximately 6 residents each year, 1 in Jeddah city, and 5 in Riyadh city. This limitation is set by the board committee to ensure that the residents have the best exposure possible. One of the limitations of our study is the cross-sectional nature of the study, which results in the inability to determine if the observed associations are causally related. Another key limitation of our study is the fact that we did not exclude participation of residents who may have had preexisting conditions including anxiety, depression, and other mood-related disorders. Furthermore, the residents may be on prescription medication for these con-

ditions, which was also not considered during the survey and may have unknowingly influenced the results of the survey. Future research using a longitudinal study design may help in examining the role of EI in transforming negative emotion of burnout into a positive outcome. Analyzing the three components of burnout, it can be deduced that EI helps in significant reduction in the tendency to perceive oneself as incompetent and incapable to achieve goals. These findings can be applied in the development and improvement of training programs for plastic surgery to minimize the burnout among future plastic surgeons.

## CONCLUSIONS

In this survey based study on Saudi Arabian plastic surgery residents, we found a positive correlation between higher levels of EI and sense of personal achievement, whereas a negative correlation was observed between higher levels of EI and EE and DP. As the cause and effect relationship cannot be concluded on the basis of the survey, a larger scale study is warranted to conclusively establish the negative and positive impacts of higher levels of EI on EE and DP and the sense of personal achievement, respectively. Plastic surgery residents who are satisfied with their salary have lower EE and DP. Residents who are satisfied with their role in the operating room have a better sense of PA.

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