# RESEARCH ARTICLE

# THE ATTITUDE AND COPING STRATEGIES TOWARD BURNOUT AMONG RESIDENTS AND FELLOWS IN DIFFERENT TRAINING PROGRAMS IN KING ABDULAZIZ MEDICAL CITY IN JEDDAH, SAUDI ARABIA

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### ABSTRACT

**Background:** Training physicians usually face a great amount of stress. Their jobs are demanding and have intense work requirements with a little rest. The aim of this study to investigate the prevalence, attitude, and coping strategies toward burnout among residents and fellows in different training programs in king Abdulaziz medical city in Jeddah, Saudi Arabia. **Methods:** A cross-sectional study was conducted among 140 residents and fellows in different training programs in King Abdulaziz Medical Cityin Jeddah, Saudi Arabia. A self-administered questionnaire was used that includes questions about demographic data, psychiatric history, Risk factors of burnout. Maslach Burnout Inventory scale was used to assess the burnout level and a brief coping scale was used to measure different coping strategies. Questions about Da'em service, a program held by Saudi Commission for Health Specialties were included as well. **Results:** 62.1% of participants were males with age ranging from 25 to 28. The level of burnout according to the MBI scale showed emotional exhaustion was high in 48.6% of participants, 28.6% exhibited high depersonalization and 78.6% with low personal accomplishment. Religion was the most common approaching strategy while self-distraction was the most common avoidant strategy. Most of the Brief Coping domains were significantly correlated with the MBI scale. Da'em service was found to be helpful only in 19.5% of participants. **Conclusion:** Burnout prevalence was high among trainees. Despite having a well structured supporting program, most of the participants showed poor appreciation or understanding to the services provided.

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# INTRODUCTION

Burnout is defined as emotional exhaustion, depersonalization, and a reduced sense of accomplishment. Burnout usually occurs secondary to occupational stress (Maslach, 1986). The first of burnout is emotional exhaustion. It is reported when the worker feels drained and depleted of both emotional and physical resources. The second component of burnout is depersonalization. Depersonalization represents a response that is negative and detached from the job. The third and final component of burnout is a reduced sense of accomplishment. This means that workers sense an inefficacy and lack productivity (Maslach, 2006).

Residents usually face a great amount of stress. Their jobs are demanding, they have intense work requirements, and they have little rest (Castelo-Branco, 2007) Residents undergo extended years of training, their work schedules are irregular, and they frequently work long hours (Abdulrahman, 2018). All of these factors may contribute to increased stress and therefore lead to burnout. In a cross-sectional study done on 1st-year medical students and psychiatry residents to identify the risks and recovery factors related to burnout. It was found that 28% of the participants met the burnout criteria that was measured by the Maslach Burnout Inventory scale (MBI). Residents with a burnout in specific scored high in measures that assessed stress, fatigue, worry, and depressive symptoms while they scored lower in measures assessing coping ability

(Chaukos *et al.*, 2016). Another retrospective study was done in 2010 under the title "Developmental Challenges, Stressors and Coping Strategies in Medical Residents: The study found that burnout scores were higher in 1st years of the program and improved in later years. They also reported high scores for the support group attendance as well as that relationship with their peers is the 1st source of support during their training program. Moreover, a study focused on burnout maladaptive strategies among surgeons and surgery residents, pointed out that doctors usually do not seek help, deny symptoms and avoid coping strategies to burnout (Stress, 2011) A national survey was done in Saudi Arabia to estimate the burnout prevalence among ophthalmology residents and its predisposing factors, and it found that 41% of the residents have burnout (Alotaibi, 2019).

Another study conducted in 2018 in Riyadh, Saudi Arabia showed that 48% of the residents have moderate to high levels of emotional exhaustion (Alyamani, 2018) Moreover, several studies were conducted in Saudi Arabia on the prevalence of burnout among different residency training programs including Otorhinolaryngology, plastic surgery, family medicine, and orthopedics, and they revealed that there is a high rate of burnout among residents (Aldrees, 2017; Aldrees, 2015; Aldubai, 2019; Alsheikh, 2019). To overcome the burnout phenomenon among training physicians, the Saudi Commission for Health Specialties (SCHFS) launched "Daem Program" Online Services in 2019. The program provides free services to help trainees in the medical field overcome anxiety, depression, and burnout. The program aims to create a suitable environment for affected healthcare trainees with a guarantee to ensure their confidential and personal information while guiding and supporting them (Daem services (Internet), 2021).

It is vital to study such an important topic, especially in such a vulnerable sample group because burnout can lead to many consequences. It has been reported that physician burnout may lead to less than optimal patient care as well as depression and even an increase in suicidal behaviors (IsHak, 2009). Furthermore, high levels of burnout have been associated with not only psychiatric morbidities but with physical illness too. One of the major physical illnesses associated with burnout is cardiovascular disease. It is also associated with increased levels of substance abuse (Zubairi, 2016). In this study, we aimed to investigate the prevalence, attitude, and coping strategies toward burnout among residents and fellows in different training programs in King Abdulaziz medical city in Jeddah, Saudi Arabia and to evaluate the residents' and fellows' attitudes toward the Da'am program.

## METHODS

This study was approved by the institutional review board at King Abdullah International Medical Research Center (KAIMRC) (RJ20/110/3). The study was conducted at King Abdulaziz Medical City in Jeddah, Saudi Arabia. This is an observational analytical cross-sectional study design where all residents and fellows in all the different training programs. All of those who fulfilled the inclusion criteria were invited to fill up a questionnaire. The Inclusion Criteria included residents and fellows who are in training, in all specialties at King Abdulaziz Medical City in Jeddah, Saudi Arabia the total number of residents according to Academic affairs was 471.

According to our sample calculations which were done with a 5% margin of error and 95% confidence interval, our sample size should be 212 this is a result. The data collection method was by a self-administered close-ended questionnaire that was sent to all residents and fellows. The questionnaire consisted of demographic data, both Maslach Burnout Inventory (MBI) Scale and Brief coping orientation to problem experience (COPE) as well as questions about "Da'em program" perception and previous psychiatric disorder. The first scale that was used is the MBI scale. It is a scale that is used to measure burnout and it is components. It is a twenty-two-item scale that is divided into three subscales. Each subscale is designed to measure the three components of the scale: emotional exhaustion, depersonalization, and reduced personal accomplishment.[16] The second scale that was used is the Brief-COPE scale. This scale is designed to measure coping mechanisms. It is a twenty-eight-item questionnaire that is divided into three subscales: problem-focused coping, emotion-focused coping, avoidant coping.[17] The questionnaire was distributed to all participants who fulfilled the inclusion criteria. The questionnaire was first intended to be administered on a face-to-face basis. But, due to the Coronavirus disease 2019 (COVID-19) pandemic, we changed our approach and we used social media, email, and WhatsApp groups to distribute our questionnaire.

For statistical analysis, it was performed using Statistical Packages for Software Sciences (SPSS) version 26 Armonk, New York, IBM Corporation. MBI dimensions had been compared to the socio-demographic and socio-demographic characteristics of the residents by using an independent sample t-test. $P < 0.05$ was considered statistically significant. Normality, statistical interactions, and collinearity (i.e., variance inflation factor) were also assessed with the Kolmogorov-Smirnov and Shapiro Wilk test. The data follows the normal distribution. Thus, parametric tests were applied. Correlation procedures were also performed to determine the linear relationship between Brief Cope domains and MBI subscales. Regarding the Ethical Considerations, consent was provided, and all participants were consented before filling the questionnaire. All data was kept secured in the office of the principal investigator. Any computerized data or documents related to the study participants will be password protected and only accessed by authorized parties. There were no names taken during the data collection process.

## RESULTS

After multiple attempts to distribute the questionnaire, 140 residents took part out of 212 and constituted 66.03% of the targeted sample size. Table 1 presented the socio-demographic characteristics of the residents. The majority of the residents (62.1%) were 25 to 28 years old with nearly two-thirds (62.1%) were males and 60% were single. Furthermore, 44.3% indicated 71 – 80 working hours per week with 52.9% had a 4 – 6 frequency of on-call per month. Additionally, approximately 62% had more than 5 hours or more sleep per day. The prevalence of residents who were satisfied with their income was 65% while the prevalence of smokers was 24.3%. Figure 1 showed the distribution of residents and fellows who responded to the questionnaire. It can be observed that the most indicated training program was general surgery (15.7%), followed by orthopedic surgery (14.3%) and urology (13.6%).

**Table 1. Socio demographic characteristics of the residents (n=140)**

| Study Data | N (%) |
|---|---|
| **Age group** | |
| •25 – 28 years | 87 (62.1%) |
| •>28 years | 53 (37.9%) |
| **Gender** | |
| •Male | 87 (62.1%) |
| •Female | 53 (37.9%) |
| **Marital status** | |
| •Single | 84 (60.0%) |
| •Married | 56 (40.0%) |
| **Year of training** | |
| •R1 | 35 (25.0%) |
| •R2 | 30 (21.4%) |
| •R3 | 30 (21.4%) |
| •R4 | 21 (15.0%) |
| •R5 | 21 (15.0%) |
| •Fellow | 03 (02.1%) |
| **How many hours do you work per week** | |
| •41 – 50 hours | 13 (09.3%) |
| •51 – 60 hours | 15 (10.7%) |
| •61 – 70 hours | 36 (25.7%) |
| •71 – 80 hours | 62 (44.3%) |
| •>80 hours | 14 (10.0%) |
| **How many on calls do you have per month** | |
| •<4 | 21 (15.0%) |
| •4 – 6 | 74 (52.9%) |
| •>6 | 45 (32.1%) |
| **How many hours do you sleep per day** | |
| •<5 hours | 54 (38.6%) |
| •≥5 hours | 86 (61.4%) |
| **Are you satisfied with your income?** | |
| •Yes | 91 (65.0%) |
| •No | 49 (35.0%) |
| **Smoking** | |
| •Yes | 34 (24.3%) |
| •No | 106 (75.7%) |

***Risk factors and burnout assessment:*** Figure 2 depicted the levels of burnout using MBI subscales. The level of emotional exhaustion (EE) was low, average, and high among 25%, 26.4%, and 48.6%, respectively while the level of depersonalization (DP) was low, average, and high among 30%, 41.4%, and 28.6%, respectively. Finally, for the level of personal accomplishment (PA), low, average, and high levels were detected among 2.1%, 19.3%, and 78.6%, respectively. We measured the differences in the scores of MBI subscales in regard to the socio-demographic characteristics of the residents using a single independent sample t-test as shown in table 2. Based on the results, it was found that the mean score of residents who were having less than 5 hours of sleep per day was statistically significantly higher in depersonalization (T=4.496; p<0.001) and personal accomplishment (T=2.119; p=0.036). Furthermore, the mean scores of smokers were statistically significantly higher in emotional exhaustion (T=5.098; p<0.001), depersonalization (T=5.577; p<0.001), and personal accomplishment (T=2.652; p=0.009). On the other hand, the mean score of those who were satisfied with their income was statistically significantly lower in emotional exhaustion (T=-3.794; p<0.001), depersonalization (T=--2.447; p=0.016), and personal accomplishment (T=-2.550; p=0.012). The relationship between the level of emotional exhaustion (X2=3.525; p=0.172), depersonalization (X2=0.947; p=0.623), and personal accomplishment (X2=1.511; p=0.470) were not statistically significant to both junior and senior residents. When compared to surgical and medical residents, high level of personal accomplishment was more common among surgical residents (X2=13.221; p=0.001) while the level of emotional exhaustion (X2=0.169; p=0.919) and depersonalization (X2=0.188; p=0.910) were not statistically significant.

***Coping strategies:*** The descriptive statistics of MBI and Brief cope subscales were given in figure 3. The mean score of the approach coping subscale was 33.3 while the mean score of the avoidant coping subscale was 27.9. Regarding approach subdomains, it can be observed that religion has the highest mean score with 5.18 while the planning subdomain was the lowest with 4.49. For the avoidant subdomain, self-distraction had the highest mean score with 5.16 while substance use had the lowest mean score with 2.28. In table 3, it can be observed that most of the brief cope domains were positively statistically significantly correlated with MBI subscales (p<0.05) with the exception of substance used (p>0.05) and religion (p>0.05). Also, denial, behavioral disengagement, humor, self-blaming, and use of information support showed no correlational agreement with the personal accomplishment subscale (p>0.05).

***Psychiatric history and Da'em perception:*** It was revealed that the prevalence of residents with chronic disease was 9.3%. Of them, the most common was diabetes (30.8%) and hypertension (23.1%). Furthermore, the proportion of residents who were diagnosed with psychiatric disorders was 14.3%. Of them, general anxiety disorder was the most common psychiatric disease followed by depression (35%). Family history of psychiatric disorder constitutes 22.1% with multiple family members being mostly affected by the mental disorder (35.5%). The prevalence of residents who thought that their stress level has increased during the pandemic was 65.7%. When asked to rate how much it increased stress (from 0 – 5; where 5 signifies the highest increased stress rates), the mean value of increased stress was 2.95 (SD 1.24).

Out of 140 residents, there were 41 (29.3%) who have heard about Da'em service. Following the results, nearly all residents (97.6%) knew that Saudi Commission for Health Specialties was the provider of Da'em service. The most common means of booking an appointment to Da'em service was through a website (87.8%). In table 4, the mean score of residents who were having medical diseases was statistically significantly higher at personal accomplishment (T=2.416; p=0.017). It was also observed that the mean score of those with a previous history of psychiatric disorders was statistically significantly higher in emotional exhaustion (T=2.011; p=0.046) and depersonalization domain (T=2.111; p=0.037). Likewise, those who felt an increase in the stress level during the COVID-19 pandemic were observed to have statistically significantly higher mean scores in emotional exhaustion (T=2.042; p=0.043). On the other hand, the mean score of those having heard about Da'em service was statistically significantly lower in emotional exhaustion (T=-2.094; p=0.038). When measuring the differences in scores of the two domains of brief cope in relation to the psychiatric history and knowledge about Da'em service, it was found that the mean score of those who considered booking an appointment at the Da'em service was statistically significantly higher in the avoidant domain (T=2.193; p=0.034). Other statements related to psychiatric history and the knowledge about Da'em service did not reach statistical significance when compared to brief cope domains (p>0.05).

**Table 2. Statistical Association between the Maslach Burnout Inventory (MBI) subscales and the socio demographic characteristics of Residents**

(n=140)

| Factor | Burnout | | |
|---|---|---|---|
| | EE | DP | PA |
| | T-test :P-value | T-test :P-value | T-test :P-value |
| Age group | -1.564; 0.120 | -0.666; 0.506 | -0.715; 0.476 |
| •25 – 28 years | | | |
| •>28 years | | | |
| Gender | 0.882; 0.379 | 0.264; 0.792 | 0.328; 0.744 |
| •Male | | | |
| •Female | | | |
| Marital status | -1.525; 0.130 | -1.875; 0.063 | -1.868; 0.064 |
| •Single | | | |
| •Married | | | |
| Specialty program | -0.236; 0.814 | -1.524; 0.130 | -3.060; 0.003 |
| •Surgical residents | | | |
| •Medical residents | | | |
| Level of training | -1.468; 0.145 | -0.349; 0.728 | -0.188; 0.851 |
| •Junior residents | | | |
| •Senior residents | | | |
| How many hours do you work per week? | -0.487; 0.627 | 0.105; 0.916 | 1.330; 0.186 |
| •41 – 70 hours | | | |
| •>70 hours | | | |
| How many on calls do you have per month? | -0.748; 0.456 | -0.249; 0.804 | 1.168; 0.245 |
| •≤6 | | | |
| •>6 | | | |
| How many hours do you sleep per day | 5.611; <0.001 | 4.496; <0.001 | 2.119; 0.036 |
| •<5 hours | | | |
| •≥5 hours | | | |
| Are you satisfied with your income? | -3.794; <0.001 | -2.447; 0.016 | -2.550; 0.012 |
| •Yes | | | |
| •No | | | |
| Smoking | 5.098; <0.001 | 5.577; <0.001 | 2.652; 0.009 |
| •Yes | | | |
| •No | | | |

Note. EE=Emotional Exhaustion.  DP=Depersonalization PA= personal achievement. SD=standard deviation
P-value has been calculated using independent sample t-test. ** Significant at p<0.05 level.

**Table 3. Correlation (Pearson-R) between Maslach Burnout Inventory (MBI) subscales and Brief COPE domains**

(n=403)

| Brief COPE Domains | MBI subscales | | |
|---|---|---|---|
| | EE | DP | PA |
| Avoidant coping subscales | 0.537 ** | 0.474 ** | 0.204 * |
| Self-distraction | 0.441 ** | 0.338 ** | 0.345 ** |
| Substance use | 0.007 | 0.112 | 0.107 |
| Denial | 0.480 ** | 0.466 ** | 0.004 |
| Venting | 0.465 ** | 0.366 ** | 0.205 * |
| Behavioral disengagement | 0.406 ** | 0.310 ** | 0.035 |
| Humor | 0.288 ** | 0.227 ** | 0.148 |
| Self-blaming | 0.334 ** | 0.365 ** | 0.145 |
| Approach coping subscales | 0.411 ** | 0.374 ** | 0.359 ** |
| Active coping | 0.420 ** | 0.363 ** | 0.304 ** |
| Emotional support | 0.370 ** | 0.283 ** | 0.226 ** |
| Use of Informational support | 0.355 ** | 0.294 ** | 0.095 |
| Positive reframing | 0.215 * | 0.215 * | 0.273 ** |
| Planning | 0.384 ** | 0.339 ** | 0.384 ** |
| Acceptance | 0.326 ** | 0.339 ** | 0.405 ** |
| Religion | 0.106 | 0.136 | 0.140 |

Note. COPE= Coping Orientation to Problems Experienced EE=Emotional Exhaustion.
DP=Depersonalization PA=personal achievement. SD=standard deviation
* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

# DISCUSSION

Burnout among healthcare workers has become a global phenomenon. physicians are exposed to high levels of work-related stressors and long working hours. There are limited studies conducted about the prevalence of burnout among the different specialties in Saudi Arabia.

A study conducted in 2012 in Saudi Arabia revealed that training residents had higher mean scores of the perceived stress scale compared to the general population and comparable scores to residents worldwide (Alosaimi, 2015). In this study MBI was used to evaluate the burnout level. We found 48.6% of the sample had a high level of EE, and 25.6% had high DP, and low PA was noted in 2.1%. A previous study conducted among 200 participants in King Abdulaziz Medical

**Table 4. Effect of burnout in the Psychiatric history and knowledge about Da'em service**

(n=140)

| Factor | Burnout | | |
|---|---|---|---|
| | EE | DP | PA |
| | T-test :P-value | T-test :P-value | T-test :P-value |
| **Do you have any medical diseases** | **1.753; 0.082** | **1.628; 0.106** | **2.416; 0.017** |
| •Yes | | | |
| •No | | | |
| **Have you ever had any psychiatric disorders** | **2.011; 0.046** | **2.111; 0.037** | **0.961; 0.338** |
| •Yes | | | |
| •No | | | |
| **Family history of psychiatric disorder** | **2.150; 0.033** | **1.821; 0.071** | **1.337; 0.183** |
| •Yes | | | |
| •No | | | |
| **Do you feel that your stress level has increased during the COVID-19 pandemic?** | **2.042; 0.043** | **1.132; 0.259** | **0.693; 0.489** |
| •Yes | | | |
| •No | | | |
| **Have you heard about daem service before?** | **-2.094; 0.038** | **-1.078; 0.283** | **0.240; 0.811** |
| •Yes | | | |
| •No | | | |
| **Have you ever thought about booking an appointment at the daem service? [(n=41)]** | **0.108; 0.915** | **0.289; 0.774** | **-1.149; 0.258** |
| •Yes | | | |
| •No | | | |

Note. EE=Emotional Exhaustion.  DP=Depersonalization PA= personal achievement. COVID-19=Coronavirus Disease 2019
P-value has been calculated using independent sample t-test. ** Significant at p<0.05 level.
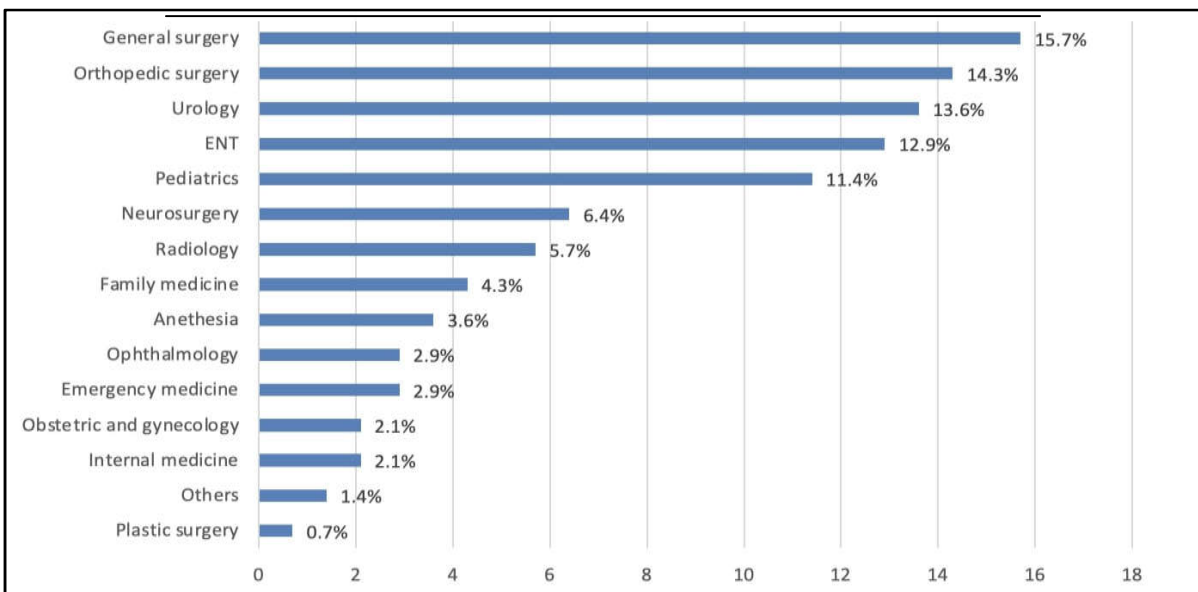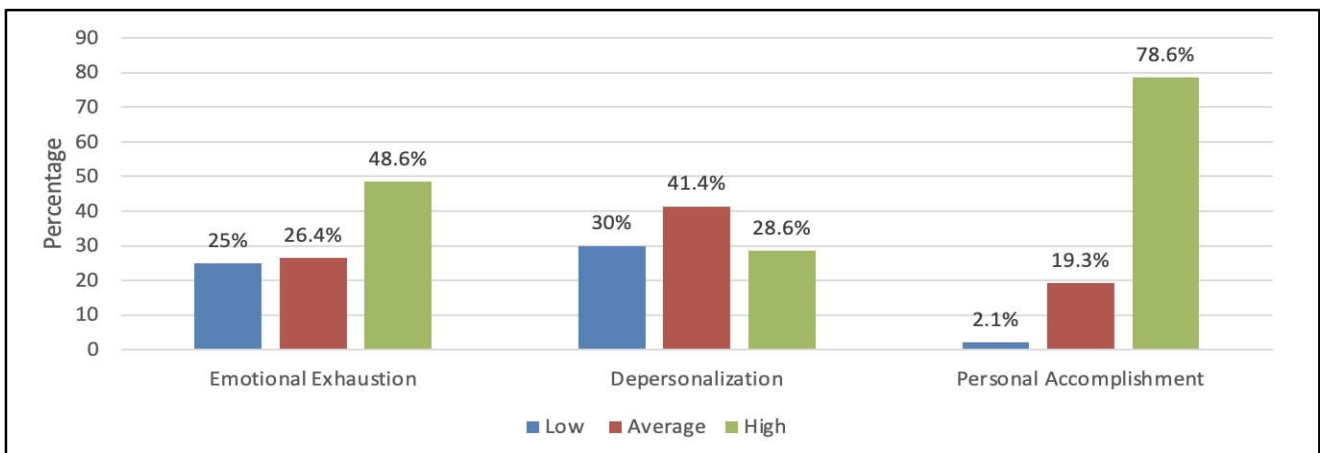


**Figure 1. Distribution of training program**



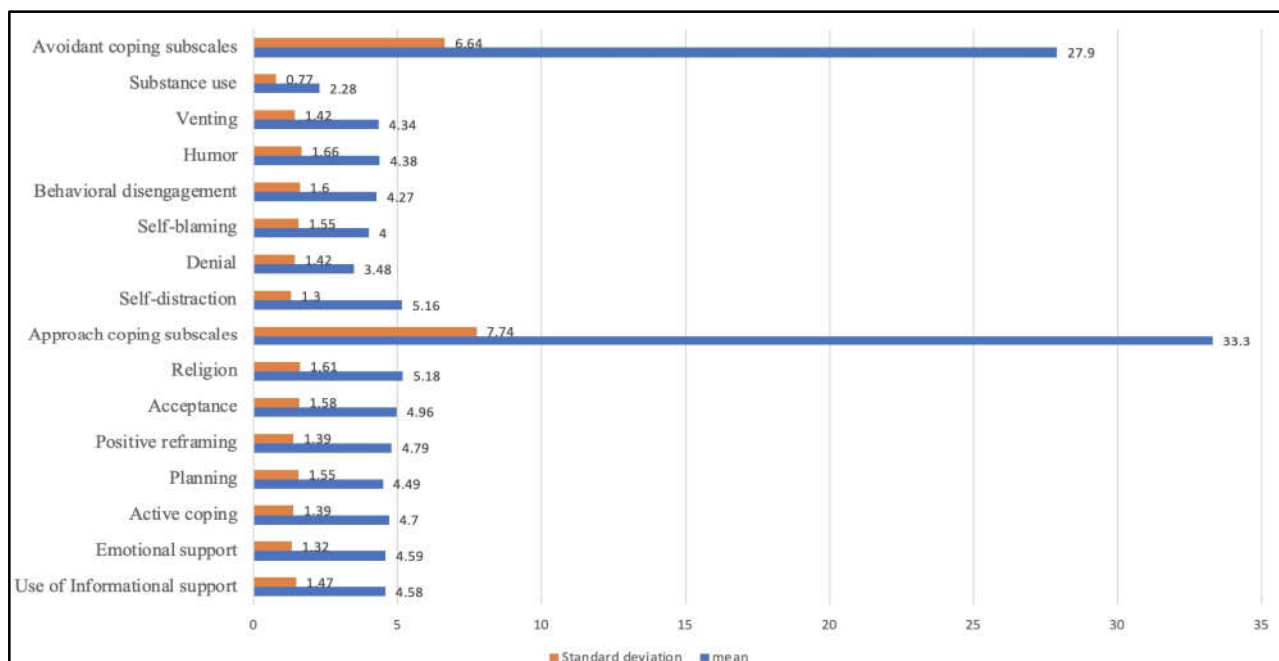**Figure 2. Levels of burnout using Maslach Burnout Inventory (MBI) subscales**

**Figure 3. Burnout Inventory Brief Coping Orientation to Problems Experienced (Brief COPE) (n=140)**

City in Riyadh showed a high EE in 12.5%, low PA in 31.5%, and high depersonalization in 51% (Alyamani, 2018). This inconsistency of the result can be explained as this study was conducted during the COVID-19 pandemic. The pandemic created new and unpredictable challenges for healthcare workers. 65.7% of participants reported higher stress levels after the pandemic. Those who felt an increased in the stress level during the COVID-19 pandemic were observed to have statistically significantly higher mean scores in emotional exhaustion (T=2.042; p=0.043). This highlights the necessity for further studies. Moreover, the study found that the relationship between the level of emotional exhaustion, depersonalization, and personal accomplishment, and residency level were not statistically significant to both junior and senior residents. Surgical residents showed a high level of personal accomplishment and a similar level of emotional exhaustion and depersonalization when compared to medical residents. We introduced a validated questionnaire, the brief COPE which consists of 14 scales measuring different coping strategies. These scales can be categorized into the approach and avoidant subscales (NovoPsych, 2021).

This study found that religion was the highest approaching strategy among the participants while planning was the lowest. Regarding the avoidant strategies, self-distraction was the most common and substance use was the least common. Correlation analysis of coping strategies and MBI subscales showed a positive correlation with most of the brief cope domains (p<0.05) except for substance use and religion. A similar study conducted among consultants in Saudi Arabia in 2014 showed religion and self-destruction were the most common approach and avoidant coping strategies, respectively (Alosaimi, 2018). On the other hand, a study in Pakistan revealed the participants tend to employ planning as an approach coping strategy and self-destruction as an avoidance strategy.[21] We also found avoidant strategies had a greater correlation with burnout levels and this finding is consistent with previous local and international studies (Alosaimi, 2018; Qamar Riaz, 2020). A systematic review with meta-analysis evaluated the burnout strategies on an individual and organizational levels.

Organizational-directed interventions included reduced workload, schedule changes, discussion meetings, and structural changes while individual-directed interventions involved mindfulness, cognitive behavioral therapy, enhanced communication skills, and stress management education. Both types of intervention were associated with decreased burnout scores. However, organizational-directed interventions have more reduction in depersonalization and improvement in personal accomplishment than individual-directed interventions (De Simone, 2019). The long-term consequence of these interventions is still an area of future studies. Burnout is an issue of the health care institutions rather than individuals. The healthcare organization should take action to reduce burnout levels and improve physician well-being. As a step to achieve this, the Saudi Commission for Health Specialties launched Da'em program. The prevalence of residents who have heard about Da'em service in our sample was 29.3% (n=41). 78% of them never thought about booking an appointment for the service despite knowing SCHFS is the main provider of the service. Only 1 resident had booked an appointment and reported it was helpful. This raised the issue of training physicians' perception toward seeking professional help. Fear of discrimination and concern about confidentiality might be a reason. Furthermore, seeking help might impact their job opportunities after finishing training programs. Additional studies are needed to explore the different causes behind seeking help behavior among physicians. The cultural and social factors could not be ignored when addressing such an issue. Health care organizations should create a safe work environment for training physicians and set structured approaches. The current COVID-19 pandemic duties changed the working schedule which made it difficult to reach all residents and fellows to collect responses. After multiple attempts to distribute the questionnaire, 140 participants filled out the survey out of 212. An online questionnaire was used instead of papers for safety precautions and to minimize the risk of virus transmission. It allowed us to reach those who were working in different COVID-19 isolation areas. It is important to acknowledge the limitations of this study. First, the significance of the outcomes can be questioned since the

study is cross-sectional. Second, the response rate was 66.03%, making our result sustainable to non-response bias. Also, the study was conducted during the COVID-19 pandemic which might lead to an overestimation of burnout prevalence.

# CONCLUSION

In conclusion, this study found that the training physicians experience a high level of burnout. Regardless of the presence of well-structured supporting programs such as Da'em, yet many trainees never seek help from the supporting programs. Therefore, more efforts need to be addressed to raise awareness regarding these services. This will impact both the physical and mental well-being of the trainees, which will greatly reflect on the health care provided to the patients as well. Further studies are needed to explore the reasons why residents are not enrolling to support programs.

**Key points**

- Burnout among training physicians is a serious and common issue.
- A few trainees seek professional mental health help. This might be due to many reasons including fear of stigma and lack of knowledge about available services.

Future studies are need to explored help-seeking behaviors toward burnout among training physicians

**Glossary abbreviation**

Brief Coping Orientation to Problems Experienced (Brief COPE)
Depersonalization (DP)
Emotional Exhaustion (EE).
King Abdulaziz Medical City (KAMC)
Maslach Burnout Inventory scale (MBI).
Personal Achievement. (PA)
Saudi Commission for Health Specialties (SCHFS)

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