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# Burnout among Preventive Residents in Saudi Arabia

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## Abstract

Background: During emergencies, most of the doctors are supposed to suffer from burnout showing psychological and emotional stress.

Objective: This study is determined to assess the prevalence and determinants of burnout among preventive residents in Makkah, Kingdom of Saudi Arabia (KSA).

Methods: A cross-sectional study that was conducted through an online questionnaire sheet. Study population and sample size: The study included 170 residents from preventive department. The questionnaire consists of five sections demographic and background variables, the level of burnout, professional factors affecting burnout, work and activity characteristics, and burnout during the Covid-19 pandemic.

Results: About 48.35% of residents suffered from physical exhaustion, 54.59% suffered from emotional exhaustion, and 40.72% always felt weak and susceptible to illness. Burnout was much greater among younger age and lowest among older age. Conclusion: the workload of preventive residents has grown significantly during the epidemic. Burnout and stress are significant difficulties for residents and variety of variables influence the rate of burnout throughout the pandemic.

**Keywords***: Burnout, pandemic*.

## Introduction

Job-related complications possess a stressful burden on workers. There's a medical term that defines job-related problems called burnout. It is a syndrome related to work which causes emotional exhaustion, depersonalization disorder, and low self-accomplishment [1]. Emotional exhaustion indicates the emotional state of feeling emotionally and physically exhausted. The depersonalization problem shows the relational measurement of self-esteem. Decreased personal accomplishment is associated with low self-evaluation of all deeds and work status [2]. It is regularly associated with the demanding jobs specially among healthcare workers and residents [3, 4]. The global prevalence among healthcare workers varies from 12% to 80% [5]. About 50% of doctors revealed suffering from burnout showing psychological and emotional stress [4]. According to the USA national data, the burnout incidence varied from 45.8% in 2011 to 54.4% in 2014. Also, during the same period of time, the frustration of doctors from work-life imbalance increased from 36.9% to 44.5% [6, 7]. It could result in decreasing the efficiency and commitment of work [8]. Also, the doctors can become more nervous, careless about details resulting in increasing the medical errors and poor decisions [2, 9]. Many studies in the Kingdom of Saudi Arabia (KSA) have highlighted the prevalence and burnout among residents and physicians, there's a lack of studies assessing the prevalence of burnout and its associated factors among preventive medicine programs thus this study is determined to assess the prevalence and determinants of burnout among preventive residents at Makkah.

## Methods

### Study design and sample

A cross-sectional study that was conducted through an online questionnaire sheet.

### Study population and sample size

The study included residents from preventive department while other residents from other departments or those with incomplete data or missing information will be excluded. The sample size calculated using a formula for 95% confidence level with an absolute precision of 5% and an expected prevalence rate of 80%, yielded a minimum sample size of 98 residents [10].

### Study tools and data collection

The self-administered online questionnaire was be used to collect data from residents. It consists of five sections, the first section questioning about demographic and background variables, section 2 questioning the level of burnout, and section 3 contains questions about professional factors affecting burnout. The 4th section will include the Work and activity characteristics associated with burnout. The fifth part will deal with burnout during Covid-19 pandemic. The questionnaires were be distributed for the selected participants. As the questionnaires are self-administered, they will be distributed through online link after explaining the aims of the study for residents. Moreover, the confidentiality of information will be ensured. Additionally, a pilot study of 20 residents was done to confirm the questionnaire's validity, and individuals joined in the pilot research were rejected from the study's original data.

### Ethical approval

The author described the aim and objectives of the study for the residents and ask them to provide an online consent. No names required to assure confidentiality of data and all information were kept confidential only for this study purposes. The study protocol was approved by the ethical committee of the Medical Board.

### Statistical analysis

The data were coded and introduced to the Statistical Package of Social Sciences (SPSS, version 22). The data were analyzed to present the findings in the descriptive and inferential statistics. The descriptive statistics include frequencies and percentages for categorical variables, while means, median and standard deviations were used to summarize numerical

data. The significant associations between demographic and background variables were detected at < 0.05 significance level.

## Results

Demographics of the studied subjects

The demographics of the included residents were presented in Table 1. The age groups were comparable, and more than half of participants were males (55.3 percent). Over 64.1% were married and the majority had normal BMI while 37.6% were overweight and 12.9% were obese. Additionally, the majority of respondents (82.4 percent) were not smokers, and 45.9% were at the 4th academic year. Less than half of respondents said that they have good academic performance and 39.4% were very good. About 44.1% were working for 5-10 years and 30% were working for more than 10 years.

Table 1: Demographics of included residents

| | N | % |
|---|---|---|
| **Age** | | |
| <30 | 67 | 39.4 |
| 30-35 | 57 | 33.5 |
| >35 | 46 | 27.1 |
| Range | 20-43 | |
| Mean±SD | 31.318±4.226 | |
| **Gender** | | |
| Female | 76 | 44.7 |
| Male | 94 | 55.3 |
| **Marital status** | | |
| Single | 58 | 34.1 |
| Married | 109 | 64.1 |
| Divorced | 3 | 1.8 |
| **BMI** | | |
| Underweight | 5 | 2.9 |
| Normal | 79 | 46.5 |
| Obese | 22 | 12.9 |
| Overweight | 64 | 37.6 |
| **Smoking** | | |
| No | 140 | 82.4 |
| Yes | 30 | 17.6 |
| **Academic year** | | |
| R1 | 3 | 1.8 |
| R2 | 50 | 29.4 |
| R3 | 39 | 22.9 |
| R4 | 78 | 45.9 |
| **Which approved training center did you train in/with?** | | |
| Makkah Al Mukarramah | 24 | 14.1 |
| Riyadh | 24 | 14.1 |
| Jeddah | 32 | 18.8 |
| Al Madinah Al Munawarah | 47 | 27.6 |
| Abha | 13 | 7.6 |
| Al-Ahsa | 9 | 5.3 |
| Jazan | 6 | 3.5 |
| Tabuk | 6 | 3.5 |
| Taif | 9 | 5.3 |
| **Academic performance** | | |
| Poor | 2 | 1.2 |
| Good | 81 | 47.6 |
| Very good | 67 | 39.4 |
| Excellent | 20 | 11.8 |
| **Working in shift** | | |
| No | 151 | 88.8 |
| Yes | 19 | 11.2 |
| **Duration of work since graduation in years** | | |
| <1 | 15 | 8.8 |
| 1-5. | 75 | 44.1 |
| 5-10. | 51 | 30.0 |
| >10 | 29 | 17.1 |
| Range | 0-33 | |
| Mean±SD | 5.422±5.278 | |
| **Number of children** | | |
| 0 | 24 | 21.4 |
| 1 | 24 | 21.4 |
| 2 | 30 | 26.8 |
| 3 | 23 | 20.5 |
| 4 | 11 | 9.8 |

Burnout levels

The burnout levels and scores are presented in table 2 & 3. About 48.35% of residents suffered from physical exhaustion, 54.59% suffered from emotional exhaustion, and 40.72% always felt weak and susceptible to illness. Less than half of them declared that they can't take it anymore and they feel extremely tired. The total burnout score showed that 55.3% suffered from weak burnout, 38.8% showed average burnout and 5.9 had high burnout levels.

Table 2: Burnout levels

| Items | | Burnout | | | | | | | Chi-square | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Never | Rarely | A little | Some time | Most of time | Always | % of burnout | $X^2$ | P-value |
| **How often are you** | **N** | 29 | 14 | 49 | 41 | 9 | 28 | 48.35 | 41.200 | 0.000 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **physically exhausted?** | **%** | 17.06 | 8.24 | 28.82 | 24.12 | 5.29 | 16.47 | | | |
| **How often are you emotionally exhausted?** | **N** | 29 | 5 | 24 | 53 | 43 | 16 | 54.59 | 54.329 | 0.000 |
| | **%** | 17.06 | 2.94 | 14.12 | 31.18 | 25.29 | 9.41 | | | |
| **How often do you think: "I can't take it anymore?** | **N** | 46 | 5 | 38 | 45 | 25 | 11 | 43.65 | 54.329 | 0.000 |
| | **%** | 27.06 | 2.94 | 22.35 | 26.47 | 14.71 | 6.47 | | | |
| **How often do you feel weak and susceptible to illness?** | **N** | 47 | 3 | 48 | 48 | 17 | 7 | 40.71 | 82.847 | 0.000 |
| | **%** | 27.65 | 1.76 | 28.24 | 28.24 | 10.00 | 4.12 | | | |
| **How often do you feel worn out (extremely tired)?** | **N** | 39 | 3 | 33 | 65 | 20 | 10 | 46.35 | 89.200 | 0.000 |
| | **%** | 22.94 | 1.76 | 19.41 | 38.24 | 11.76 | 5.88 | | | |

Table 3: Burnout score

| **Total Burnout** | | |
|---|---|---|
| | **N** | **%** |
| **Weak** | 94 | 55.3 |
| **Average** | 66 | 38.8 |
| **High** | 10 | 5.9 |
| **Total** | 170 | 100.0 |
| **Range** | 4-39. | |
| **Mean±SD** | 21.012±8.723 | |
| **$X^2$** | 64.568 | |
| **P-value** | <0.001* | |

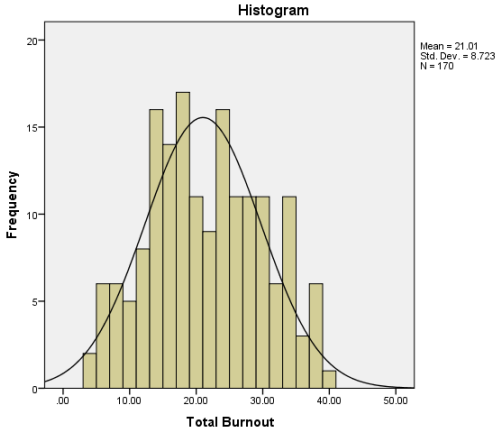


Fig. 1: Total burnout

Factors affecting burnout during covid-19 pandemic

The professional factors that affect burnout were exhaustion from another day of work among 41.18%, however only 34.12 % felt tired during all work hours. Half of the participants declared that they have enough energy for family and friends during free time while 50% declared that they are frustrated from work and 43.53 feels complete burnout from work.

As for the work and activity during Covid-19 pandemic, 47.06% thinks that it is hard to work during corona pandemic, and more than half of respondents thinks that working in this scenario could drain more energy, make them feel depressed and takes more efforts that what they get back. On the other hand, more than half of them thinks it's fruitful to work during this pandemic, 56.47% don't hesitate to work during the pandemic, 50.59% don't have fears to catch Covid-19 during working and don't think that it tests their patience or that lock down is stressing them. Most of the participants have fears from infecting their families (67.65%) and 58.41% don't feel that they're welcomed by the community. The majority of respondents (88.82%) didn't use any abusive substances during the lockdown period, 79.41% are not afraid of death during working and 62.35% feel that they are protected by the hospital, but they think that their colleagues are not supporting them (Table 4).

Table 4: Factors affecting burnout during covid-19 pandemic

| | **No** | | **Yes** | | **Chi-square** | |
|---|---|---|---|---|---|---|
| | **N** | **%** | **N** | **%** | **$X^2$** | **P-value** |
| **Professional factors affecting burnout** | | | | | | |
| 1. Are you exhausted in the morning at the thought of | 100 | 58.82 | 70 | 41.18 | 5.294 | 0.021 |

| | | | | | | |
|---|---|---|---|---|---|---|
| another day at work? | | | | | | |
| 2. Do you feel that every working hour is tiring for you? | 112 | 65.88 | 58 | 34.12 | 17.153 | 0.000 |
| 3. Do you have enough energy for family and friends during leisure time? | 84 | 49.41 | 86 | 50.59 | 0.024 | 0.878 |
| 4. Do you feel that your work is emotionally exhausting? | 91 | 53.53 | 79 | 46.47 | 0.847 | 0.357 |
| 5. Does your work frustrate you? | 85 | 50.00 | 85 | 50.00 | 0.000 | 1.000 |
| 6. Do you feel burnt out (complete physical or mental exhaustion) because of your work? | 96 | 56.47 | 74 | 43.53 | 2.847 | 0.092 |
| **Work and activity characteristics associated with burnout during Covid-19 pandemic** | | | | | | |
| 1. Do you feel it is hard to work in the current scenario? | 90 | 52.94 | 80 | 47.06 | 0.588 | 0.443 |
| 2. Does it drain more of your energy to work during the current scenario? | 84 | 49.41 | 86 | 50.59 | 0.024 | 0.878 |
| 3. Do you find it fruitful while performing your work during the current scenario? | 77 | 45.29 | 93 | 54.71 | 1.506 | 0.220 |
| 4. Do you feel that you are giving more than what you get back while working in the current scenario? | 79 | 46.47 | 91 | 53.53 | 0.847 | 0.357 |
| 5. Do you hesitate to work during this current scenario? | 96 | 56.47 | 74 | 43.53 | 2.847 | 0.092 |
| 6. Do you feel depressed because of the current scenario? | 97 | 57.06 | 73 | 42.94 | 3.388 | 0.066 |
| 7. Do you feel that your patience is tested while working in the current scenario? | 87 | 51.18 | 83 | 48.82 | 0.094 | 0.759 |
| 8. Do you feel lock down due to the current scenario has added stress on you? | 90 | 52.94 | 80 | 47.06 | 0.588 | 0.443 |
| 9. Do you have fear to catch COVID-19 infection while working in the current scenario? | 86 | 50.59 | 84 | 49.41 | 0.024 | 0.878 |
| 10. Do you have a fear of family members catching infection because of your work exposure? | 55 | 32.35 | 115 | 67.65 | 21.176 | 0.000 |
| 11. Do you feel welcomed by the community because you are a health care worker and working in the current scenario? | 69 | 40.59 | 101 | 59.41 | 6.024 | 0.014 |
| 12. Are you indulging in any substance abuse (alcohol/drugs/smoking) during this period of lockdown? | 151 | 88.82 | 19 | 11.18 | 102.494 | 0.000 |
| 13. Do you have a fear of death while working in the current scenario? | 135 | 79.41 | 35 | 20.59 | 58.824 | 0.000 |
| 14. Do you feel you are being properly protected by the hospital while working in the current scenario? | 106 | 62.35 | 64 | 37.65 | 10.376 | 0.001 |
| 15. Do you feel you are being supported by colleagues during the current scenario? | 64 | 37.65 | 106 | 62.35 | 10.376 | 0.001 |

The relation between the demographics with knowledge and attitude of included subjects

The younger age and shorter durations of working experience were associated with higher levels of burnout (Table 5).

Table 5: Relation between different studied basic demographic data and burnout level.

| | | N | Total Burnout | F or T | ANOVA or T-test | |
|---|---|---|---|---|---|---|
| | | | Mean ± SD | | test value | P-value |
| **Age** | **<30** | 67 | 21.060 ± 9.007 | F | 4.195 | 0.017* |
| | **30-35** | 57 | 23.175 ± 8.650 | | | |
| | **>35** | 46 | 18.261 ± 7.744 | | | |
| **Gender** | **Female** | 76 | 22.092 ± 8.640 | T | 1.457 | 0.147 |
| | **Male** | 94 | 20.138 ± 8.737 | | | |
| **Marital status** | **Single** | 58 | 20.707 ± 9.279 | F | 0.591 | 0.555 |
| | **Married** | 109 | 21.028 ± 8.469 | | | |
| | **Divorced** | 3 | 26.333 ± 7.506 | | | |
| **BMI** | **Underweight** | 5 | 21.800 ± 3.834 | F | 1.939 | 0.125 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Normal** | 79 | 19.329 ± 8.741 | | | |
| | **Obese** | 22 | 23.227 ± 8.491 | | | |
| | **Overweight** | 64 | 22.266 ± 8.811 | | | |
| **Smoking** | **No** | 30 | 22.900 ± 9.419 | T | 1.309 | 0.192 |
| | **Yes** | 140 | 20.607 ± 8.548 | | | |
| **Academic year** | **R1** | 3 | 18.333 ± 11.547 | F | 0.640 | 0.590 |
| | **R2** | 50 | 19.740 ± 9.523 | | | |
| | **R3** | 39 | 21.513 ± 7.820 | | | |
| | **R4** | 78 | 21.679 ± 8.586 | | | |
| **Which approved training center did you train in/with?** | **Makkah Al Mukarramah** | 24 | 19.458 ± 6.679 | F | 1.998 | 0.05* |
| | **Riyadh** | 24 | 23.083 ± 7.089 | | | |
| | **Jeddah** | 32 | 23.781 ± 10.207 | | | |
| | **Al Madinah Al Munawarah** | 47 | 19.468 ± 9.193 | | | |
| | **Abha** | 13 | 20.615 ± 9.456 | | | |
| | **Al-Ahsa** | 9 | 21.222 ± 7.242 | | | |
| | **Jazan** | 6 | 11.333 ± 4.926 | | | |
| | **Tabuk** | 6 | 24.000 ± 6.387 | | | |
| | **Taif** | 9 | 22.667 ± 8.515 | | | |
| **Academic performance** | **Poor** | 2 | 23.500 ± 16.263 | F | 1.638 | 0.183 |
| | **Good** | 81 | 21.519 ± 9.321 | | | |
| | **Very good** | 67 | 19.448 ± 8.226 | | | |
| | **Excellent** | 20 | 23.950 ± 6.517 | | | |
| **Working in shift** | **No** | 151 | 20.669 ± 8.696 | T | -1.450 | 0.149 |
| | **Yes** | 19 | 23.737 ± 8.678 | | | |
| **duration of work since graduation in years** | **<1** | 15 | 22.800 ± 7.514 | F | 4.289 | 0.006* |
| | **1-5.** | 75 | 23.227 ± 8.939 | | | |
| | **5-10.** | 51 | 19.157 ± 9.131 | | | |
| | **>10** | 29 | 17.621 ± 6.155 | | | |

## Discussion

Coronavirus illness is an acute deadly disease that progresses via the respiratory system. It is widely established that communicable diseases epidemics have a psychological influence on both health care professionals (HCWs) and the general public [11]. According to multiple research, the 2019 Coronavirus disease outbreak was connected with fear of infection, depression, distress, and anxiety among HCWs [12]. A study discovered that 75% of participants experienced burnout. 46% of participants were nurses, whereas 48% worked in medical departments. Numerous factors were found to be strongly correlated with exhaustion during COVID-19 emergency, as well as elevated work time to support the delivery of ideal medical services during the crisis, the interpretation of being pressed to interact with COVID-19 patients, being evaluated for COVID-19 numerous times, and age demographic [13]. This study showed a high prevalence of burnout which was average among most of the residents and the reasons for the high prevalence are using a validated scale to diagnose burnout rather with other direct question asking participants if they believe they are experiencing job burnout, as was done in the majority of prior investigations. Participants may assume that they do not have job burnout and respond "no" to this question, but if the appropriate questions constituting a scale are asked, they may reveal that they do have work burnout [14].

According to earlier research, the rate of burnout within Saudi medical residents was between 70% and 80% [15]. Most of individuals in this research had a high depersonalization, demonstrated poor personal accomplishment, about 62% shown a high EE. International research indicates that the incidence of burnout among medical trainees varies between 27% and 75%, depending on the specialty [15]. Burnout was widespread in

more than 70% of medical residents in the United Arab Emirates [16]. In Lebanon, 27% of resident doctors satisfied the burnout threshold [17]. Burnout was prevalent among residents of Brazil at 27.9 percent [18]. Burnout symptoms were prevalent in 48.8 percent of resident doctors in the United States [19]. It is unknown why Saudi medical residents may suffer from greater burnout. According to some scholars, the cultural and social climate of the kingdom may have an effect on burnout. Saudi patients anticipate more from physicians as a result of the general public's lack of health knowledge. Additionally, Saudi patients and their family have a cultural inclination to seek counsel and aim their attention more toward older physicians, while ignoring novice doctors. This may result in a diminished sense of worth, which may contribute to increased burnout [20].

This research discovered that burnout was much greater among younger age and lowest among older age. Numerous studies have revealed that younger Health care workers are more likely to acquire mental stress [21]. One theory is that younger people are more vulnerable to social media, which spreads massive quantities of information on the crisis, and are also more influenced by limits on outdoor activities during the lockdown, due to their greater involvement in such activities than older individuals [22]. Another idea backed by an article on awareness about and attitudes around COVID-19 is that older adults can control their stress better than younger adults since they are more educated about the pandemic [23]. It is possible that this research has limitations since the data was obtained through an online survey that was disseminated through social networking websites and apps. It is probable that this would have narrowed the scope of the research, decreased the likelihood of the survey being completed, and increased the difficulty of sending the survey to all prospective participants. However, because of the necessity for social separation during the COVID-19 crisis, the use of an online questionnaire was the chosen technique of data collection. A further limitation of the study was that the sample size of the participants was adequate to estimate the prevalence of burnout among Health care workers, but not for conducting within-group analyses of other covariates or generalizing the results. In order to better understand burnout and its relationship to other factors, more study must be conducted through formal methods of disseminating surveys to guarantee that a high sample size and correct data are obtained. Furthermore, future study should concentrate on identifying variables that contribute to burnout, sub-analyzing groups, and determining if there is a statistically significant correlation between factors and burnout.

## Conclusion

During catastrophes, people confront several obstacles that cause tremendous stress. The COVID-19 epidemic has been a harrowing experience for people worldwide; no comparable occurrence has occurred during the past decades. Due to the nature of their employment, health care employees faced additional obstacles throughout this epidemic. This research demonstrates that the workload of preventive residents has grown significantly during the epidemic. Psychological well-being is critical for them to continue working at a high level in their jobs, even more so during catastrophes when the expectations on them are increased. This research established that burnout and stress are significant difficulties for residents and that a variety of variables influenced the rate of burnout throughout the pandemic thus Authorities should consider these issues to limit their impact on Health care workers while planning for or responding to such pandemics.

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