Determinants and predictors of Occupational Burnout syndrome among Residents Physicians

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ABSTRACT
Background: The burnout syndrome has 3 dimensions; first is emotional exhaustion, second one is depersonalization, and third is low personal accomplishment. Work related burnout is increased nowadays and it becomes a serious problem affecting people who working in human services, particularly healthcare workers. This study aimed to: Determine the frequency of burnout syndrome and related factors among Salahaddin resident physicians. Subject and Method: A cross-sectional study , done from 11th of November 2021 to 15th of March 2022. A convenient sample of 100 resident and permanent doctors, working in Salahdin Public hospitals. Inclusion criteria were current residents doctor who had at least one year in a residency program. Data collected using interview questionnaire form based on the Maslach Burnout Inventory. Results: The 100 resident doctor information analyzed and found that 56(56%) , 44(44%) were male and female respectively. High frequency of the resident aged 26-30 years 68(68%), 75(75%) of them living in Salahdin, junior residents represent 52(52%) and 48(48%) were permanent resident. The high scores of occupational exhaustion was reported among 41(41%). The high scores of depersonalization / loss of empathy was reported among 42(42%). The low scores of personal accomplishment assessment scores was reported among 64(64%). Females 21(47.7%) had more occupational exhaustion than male doctors 20(35.7%). high score of depersonalization / loss of empathy reported among 22(39.3%) of the male and 20(45.5%) of the females. Conclusion: burnout frequency was high among Iraqi residents with high scores of occupational exhaustion, and depersonalization/ loss of empathy, and high percentage of low scores of personal accomplishment assessment.

1. Introduction

Residencies are traditionally hospital-based, and in the middle of the twentiethcentury, residents would often live (or "reside") in hospital-supplied housing. "Call"(night duty in the hospital) was sometimes as frequent as every second or third night for up to three years. [(1)]. Residency is well-known to be a stressful period in medical training. In recent years, programmatic reforms, including duty-hour restrictions, have been made by individual programs and accrediting bodies to reduce resident stress[(1,2)]. However, there continues to be a need to further explore issues related to stress and well-being, including the identification of appropriate measurement tools. The problem of burnout within the medical profession has received greater attention. Burnout, which has been defined as a three-dimensional syndrome involving occupationally-related feelings of emotional exhaustion, depersonalization, and professional inefficacy [(3,4)].It has been estimated to be prevalent in 10–76% of residents[(5)]. Herbert Freudenberger was first psychologist who describe burnout in 1974. He analyzed dissatisfaction with work, particularly related to stress. Burnout syndrome among medical staff can be defined as the stateof physical and mental exhaustion felt due to medical care provided to other people. Burnout had three elements. First is emotional exhaustion (overextension and exhaustion), second is depersonalization (characterized by a detached, negative attitude, detached interactions with others) and third is feeling of decreased personal accomplishment (feelings of incompetence and lack of

accumulation during work) [6]. Work-related stress in healthcare providers become a serious problem for health workers and world economy[7]. The syndrome among resident and permanent doctors has reached epidemic levels[8,9]. In addition, it has economic impact, since the cost of replacing a physician in the workplace isup to two to three times his annual salary[7]. Emotional exhaustion and irritability in the work environment may lead to the development of psychiatric problems, with an emphasis on burnout, which is characterized by its subdimensions, being emotional exhaustion, depersonalization and diminished personal accomplishment[10]. The consequences of burnout are potentially severe for caregivers, patients andhealth institutions, and include the risk of medical errors, depression, and adverse effects on patient safety[11]. The aim of this study was to determine the frequency, predictors, related factors, extent, and levels of burnout syndrome among resident and permanent physicians in Salahaddin

2. Materials and Methods

Study Design

This research was designed as a cross-sectional study conducted over a period of four months, from 11th November 2021 to 15th March 2022. The cross-sectional nature of the study allows for the collection of data at a single point in time, providing a snapshot of the prevalence and associated factors of burnout syndrome among the target population.

Target Population

The target population for this study included both resident and permanent doctors working in general hospitals within the Salahdin governorate. The focus on this specific group aimed to provide insights into the occupational burnout syndrome prevalent among medical professionals in this region.

Sampling Method

A total of 100 doctors were selected using convenience sampling. The sample comprised both resident doctors, who had spent at least one year in a residency program, and permanent doctors. Convenience sampling was employed to facilitate easy access to participants, although it may introduce some bias, it is practical for exploratory research where specific random sampling methods are challenging to implement.

Exclusion Criteria

To ensure the relevance and accuracy of the data, specific exclusion criteria were applied. Resident doctors who did not complete the research questionnaire were excluded from the study. Additionally, resident doctors who had not completed at least one year in their residency program were also excluded. Furthermore, doctors who had finished their residency before the start of the study were not included. These criteria helped maintain a consistent and relevant participant pool for analyzing burnout syndrome among current residents and permanent physicians.

Ethical approval: Approval permission was presented to the director of Salah Aldin Health Directorate/ according to the document number 187 (including the number and the date in 7/11/2021). An interview was conducted with these patients using a questionnaire form created by the investigator, which included demographic information such as age, gender, and so on.

Data Collection Method

Data was collected through structured interviews using a well-established questionnaire. The Maslach Burnout Inventory (MBI), which served as the basis for the questionnaire, is a validated 22-item tool widely recognized as the standard for measuring burnout. The MBI evaluates three dimensions of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. By using the MBI, the study ensured that the measurement of burnout was both reliable and valid, reflecting the true extent and nature of burnout syndrome among the participating

doctors.

Participants were interviewed in a manner that allowed them to reflect on their experiences and provide comprehensive responses. This approach ensured that the collected data was rich and informative, facilitating a thorough analysis of the factors contributing to burnout and the prevalence of the syndrome among the target population. The interviews were conducted in a confidential setting to encourage honest and open communication from the participants.

3. Results and Discussion

The 100 resident doctors information analyzed and found that 56(56%) of thesample were male and 44(44%) were female. High percentage of the resident aged 26-30 years 68(68%), 75(75%) of them living in Salahdin, junior residents represent52(52%) and 48(48%) were Permanent resident

Table 1: The general characteristics of the sample

Variable	Category	Frequency	Percentage (%)
Gender	Male	56	56%
	Female	44	44%
Age Group	21-25 years	10	10%
	26-30 years	68	68%
	≥ 31 years	22	22%
Location	Salahdin	75	75%
	Another city	25	25%
Residency Status	Junior Residents	52	52%
	Permanent Residents	48	48%
Marital Status	Single	46	46%
	Married	54	54%
Job Title	Junior Resident	52	52%
Emotional Exhaustion (EE) Scores	High Scores (EE)	41	41%

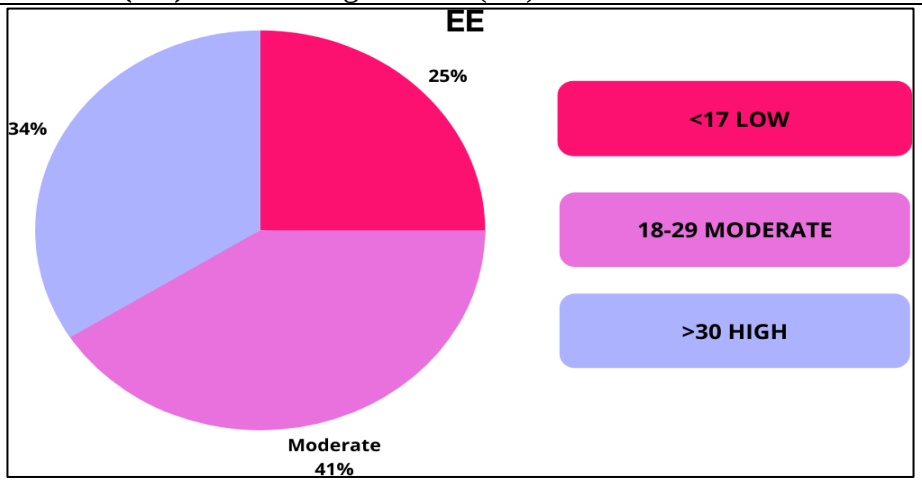

Figure 1: Frequency of physician according to occupational exhaustion (EE) scores.

The high scores of depersonalization / loss of empathy (DP) was reportedamong 42(42%), as shown in figure 2

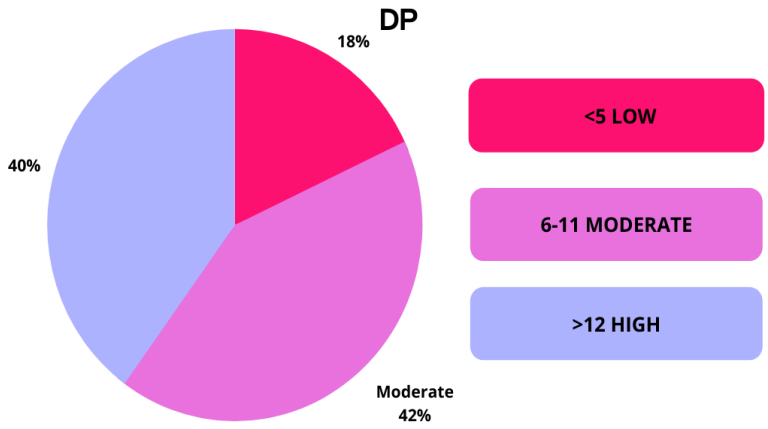

Figure 2: Frequency of physician according to depersonalization / loss ofempathy (DP) scores.

The low scores of personal accomplishment assessment (PA) scores wasreported among 64(64%), as shown in and figure 3.

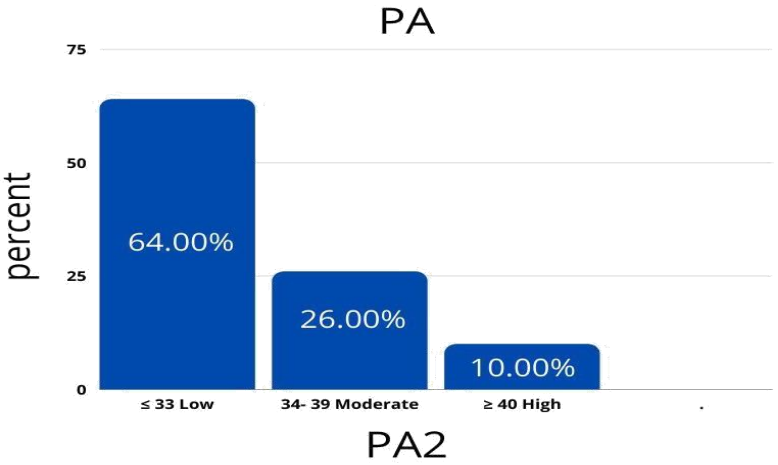

Figure 3: The distribution of sample according to personal accomplishmentassessment (PA) scores.

The relation of gender and burnout variables scores show that 20(35.7%) of males had EE in comparison to 21(47.7%) of the females, this relation was not statistically significant. Regarding DP the high score reported among 22(39.3%) ofthe male and 20(45.5%) of the females, this relation was not statistically significant. Regarding PA the low score reported among 31(55.4%) of the male and 33(75%) ofthe females, this relation was not statistically significant. As shown in table 2

The highest percent of high score of EE was obtained by 11(50%) of those aged ≥ 31 years, while among those aged 21-25 years was 4(40%), and among thoseaged 26-30 years was 26(38.2%), this relation was statically non significant P value
> 0.05.

Table 2: The relation of gender and burnout variables scores.

Burnout Variables Scores	Category	Male Frequency (%)	Female Frequency (%)	Total Frequency (%)	P Value (X^2, df)

EE	≤ 17 Low	14 (25.0%)	11 (25.0%)	25 (25.0%)	> 0.05 (1.91, 2)
	18-29 Moderate	22 (39.3%)	12 (27.3%)	34 (34.0%)	
	≥ 30 High	20 (35.7%)	21 (47.7%)	41 (41.0%)	
DP	≤ 5 Low	9 (16.1%)	9 (20.5%)	18 (18.0%)	> 0.05 (1.17, 2)
	6-11 Moderate	25 (44.6%)	15 (34.1%)	40 (40.0%)	
	≥ 12 High	22 (39.3%)	20 (45.5%)	42 (42.0%)	
PA	≤ 33 Low	31 (55.4%)	33 (75.0%)	64 (64.0%)	> 0.05 (4.75, 2)
	34-39 Moderate	17 (30.4%)	9 (20.5%)	26 (26.0%)	
	≥ 40 High	8 (14.3%)	2 (4.5%)	10 (10.0%)	
	Total	56 (100.0%)	44 (100.0%)	100 (100.0%)	

The high DP score was found among those 26- 30 years 29(42.6%), while among those aged 21-25 years was 4(40%), and among those aged >31 years was 9(40.9%), this relation was statically non - significant P value > 0.05. as shown in figure 3. The low PA score was found among those aged ≥ 31 years 15(68.2%), whileamong those aged 26-30 years was 44(64.7%), and among those aged 21- 25 years was 5(50%), this relation was statically non- significant P value > 0.05. as shown infigure 3.4

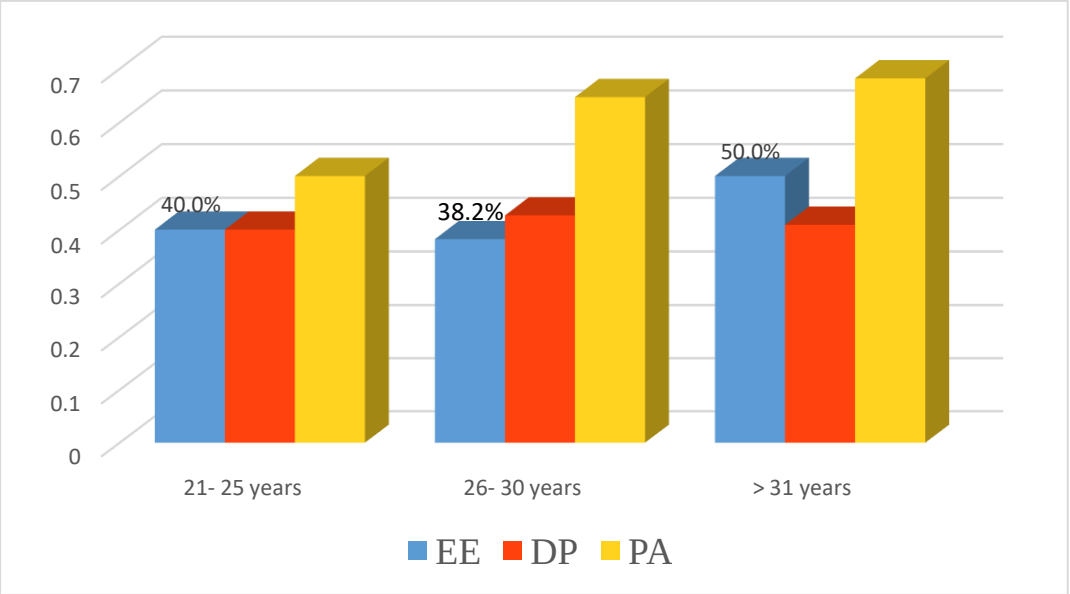

Figure 4: The relation of age and positive burnout variables.

The relation of Job title and burnout variables scores show that 27(51.9%) ofJunior resident had EE in comparison to 14(29.2%) of the Permanent resident, this relation was statistically significant. Regarding DP the high score reported among 27(51.9%) of the Junior resident and 15(31.3%) of the Permanent resident, this relation was not statistically significant. Regarding PA the low score reported among32(66.7%) of the Junior resident and 32(61.5 %) of the Permanent resident, this relation was not statistically significant. As shown in table 3.3.

Table 3. The relation of Job title and burnout variables scores.

Burnout variablesscores	**Job title**				**Total**		**P value (X^2, df)**
	Junior resident		**Permanent resident**				
	No.	%	No.	%	No.	%	
≤17 Low	9	17.3%	16	33.3%	25	25.0%	< 0.05

EE	18- 29 Moderate	16	30.8%	18	37.5%	34	34.0%	(6.04, 2)
	≥ 30 High	27	51.9%	14	29.2%	41	41.0%	
	≤ 5 Low	7	13.5%	11	22.9%	18	18.0%	
DP	6- 11 Moderate	18	34.6%	22	45.8%	40	40.0%	> 0.05 (4.52, 2)
	≥ 12 High	27	51.9%	15	31.3%	42	42.0%	
	≤ 33 Low	32	61.5%	32	66.7%	64	64.0%	
PA	34- 39 Moderate	12	23.1%	14	29.2%	26	26.0%	> 0.05 (3.6, 2)
	≥ 40 High	8	15.4%	2	4.2%	10	10.0%	
Total		52	100%	48	100%	100	100%	

The relation of Living city and burnout variables scores show that 30(40%) ofthose live in Salahdin had EE in comparison to 11(44%) of those live in another city, this relation was not statistically significant. Regarding DP the high score reported among 35(46.7%) of those live in Salahdin and 7(28%) of those live in another city, this relation was not statistically significant. Regarding PA the low score reported among 46(61.3%) of those live in Salahdin and 18(72%) of those livein another city, this relation was not statistically significant. As shown in table 3.4.

Table 4: The relation of residency and burnout variables scores.

Burnout Variables Scores	Category	Salahdin Frequency (%)	In Another City Frequency (%)	Total Frequency (%)	P Value (X^2, df)
EE	≤ 17 Low	17 (22.7%)	8 (32.0%)	25 (25.0%)	> 0.05 (1.7, 2)
	18-29 Moderate	28 (37.3%)	6 (24.0%)	34 (34.0%)	
	≥ 30 High	30 (40.0%)	11 (44.0%)	41 (41.0%)	
DP	≤ 5 Low	12 (16.0%)	6 (24.0%)	18 (18.0%)	> 0.05 (2.7, 2)
	6-11 Moderate	28 (37.3%)	12 (48.0%)	40 (40.0%)	
	≥ 12 High	35 (46.7%)	7 (28.0%)	42 (42.0%)	
PA	≤ 33 Low	46 (61.3%)	18 (72.0%)	64 (64.0%)	> 0.05 (0.92, 2)
	34-39 Moderate	21 (28.0%)	5 (20.0%)	26 (26.0%)	
	≥ 40 High	8 (10.7%)	2 (8.0%)	10 (10.0%)	
Total		75 (100.0%)	25 (100.0%)	100 (100.0%)	

The mean working hours per week were more among those with high scoreEE, and DP, (66.7±27.8), (68.4±26) respectively. Regarding DP those with lower score <33 had higher working hours(64±39), these relations were statistically not significant, as shown in table 5

Table 5: The Relation of Working Hours per Week and Burnout Variables sores

Burnout Variables Scores	Category	Mean Working Hours	Standard Deviation

EE	≤ 17 Low	46.2	29.4
	18-29 Moderate	65.5	45.4
	≥ 30 High	66.7	27.8
DP	≤ 5 Low	57.6	30.2
	6-11 Moderate	55.2	45.3
	≥ 12 High	68.4	26.0
PA	≤ 33 Low	64.0	39.0
	34-39 Moderate	58.2	29.5
	≥ 40 High	50.4	29.2

Iraq's healthcare system is in crisis. There's a shortage of drugs and the medical staff to administer them. Over the past three decades the country has been ravaged by war and United Nations (U.N.) sanctions. Yet even in times of relative stability, Iraq has missed opportunities to expand and rebuild its healthcare system.In the last decade, data from the World Health Organization shows, Iraq's central government has consistently spent far less per capita on healthcare than its much poorer neighbor's. Unavailability of medical equipment and drugs shortage and other health facilities were completely destroyed [(36)], All these facts put the physician under stress. The high scores of occupational exhaustion (EE) was reported among 41(41%), the high scores of depersonalization / loss of empathy (DP) was reported among 42(42%), and the low scores of personal accomplishment assessment (PA) scores was reported among 64(64%). this goes with previous studies but it was higher than them in all burnout items, and even higher from those studies done previously in Iraq. In Iraq in 2017 the MBI was lower than what reported in this study,non of the physician had high score of EE, while regarding DP high score reported among (78.7%), and low (17.4%) for the PA subscale[(37)]. Al Dabbagh AM et al found that sixty percent participants in his study had a high level of emotional burnout[(38)]. In Syria Alhaffar BA, et al found (77.9%), (54.6%) of study sample had a high level of (EE) and (DP) respectively, but low level (13.7%) for (PA)[(39)]. Other study revealed that the percentage of EE was 12%, DP was 35%, and PA was 32%[(40)]. This study proved that females were more prone for burnout than males, high score of EE (47.7%) among female, while in males (35.7%), regarding DP was (45.5%) among females, (39.3%) among males, regarding PA the low score reported among (55.4%) of the male and (75%) of the females. This goes with Jadoo SA and et al in Iraq the overall emotional exhaustion was higher among female doctors, especially married, and who are bearing children [(41)]. This was in opposite to In Syria Alhaffar BA, and et al in Syria who found males had higher levels of EE (82.8%), and DP (55%), and lower levelsof PA (14.9%) than females (71.6%), (54%), (12.1%) respectively [(39)] . Junior resident had higher percent of burnout than permanent residents,(51.9%) of Junior resident had EE in comparison to (29.2%) of the Permanent resident, this relation was statistically significant. the high score of DP reported among (51.9%) of the Junior resident and (31.3%) of the Permanent resident, PA thehigh score reported among (15.4%) of the Junior resident and (4.2%) of the Permanent resident. This may be due to the fact that junior residents had less practical training and skills than permanent doctors putting them under stress more than the others. Jadoo SA et al assured that emotional exhaustion was higher among non specialist doctors [(41)].

Conclusion

1- The high scores of occupational exhaustion (EE) was reported among41(41%).
2- The high scores of depersonalization / loss of empathy (DP) was reported among 42(42%). The low scores of personal accomplishment assessment (PA) scores was reported

among 64(64%).

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