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Research Paper

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LEVELS AND DETERMINANTS OF WORK-RELATED STRESS AMONG RESIDENT DOCTORS IN BASRAH, IRAQ

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Abstract:

Background: A proper healthcare service can be provided by healthcare workers including physicians and paramedics with perfect mental health who are free from occupational stress. Stress can affect up to 60% of health care providers including physicians, advanced care providers, and nurses. The study aimed to measure the prevalence of work-related stress among resident doctors in Basrah city and to determine its determinants.
Method: An observational cross-sectional study that had been conducted at Al Basrah center Hospital. Ninety-seven resident doctors were included. The doctors were interviewed through the usage of a special questionnaire, the Workplace Stress Scale (WSS) was used to assess the stress level among doctors.
Results: Of the 97 resident doctors, the mean age was 31.04 years. More than half were females, 43% were at low stress, and those with severe stress formed only 10%. There is a significant association between the stress scale and age, gender, having children, Smoking status, work experience, working hours /week, night shift and work at the weekend since the p-value <0.05.
Conclusion: More than half of the participants expressed some level of sqavtress, and those with younger age, male sex, having children, smokers, with less work experience, higher working hours, working at weekends and having a night shift all had higher levels of stress.

Keywords: Resident-doctors Determinants work-related stress-scale Basrah

Introduction:

A proper healthcare service can be provided by healthcare workers, including physicians and paramedics, with optimal mental health free from occupational stress. Occupational stress is defined by the WHO as people's responses to work demands and pressures that are not aligned with their knowledge and abilities and which challenge their ability to cope. This stress worsens when employees lose support from supervisors and colleagues .[1] The prevalence of stress among healthcare providers, including physicians, advanced care providers, and nurses, can exceed 60% .[2,3]

In developing countries, occupational stress is increasingly recognized as a significant problem that needs attention due to its serious consequences on workers and their performance, particularly in healthcare settings .[4] It is directly associated with several serious adverse effects, including absenteeism, increased turnover, and inadequate job performance .[5] Additionally, it has direct harmful effects on patients, increasing the risk of medical errors .[6,7]

The perpetuation of high stress levels is a cornerstone of burnout ,[8] which is defined by the World Health Organization as prolonged stress that culminates in emotional exhaustion, depersonalization, and diminished professional efficacy .[9]

The sources of stress and burnout among healthcare workers are often related to the work environment and result from factors such as uneven workloads, high job demands, inadequate human resource capacity, poor recognition and promotion, time pressures, job insecurity, lack of support, and inadequate pay .[10,11]

This study aimed to measure the prevalence of work-related stress among resident doctors in Basrah city and to determine its determinants.

Patients and Methods:

This observational cross-sectional study, conducted at eight hospitals in Al Basrah Center, assessed the prevalence of stress among resident physicians. The hospitals included are Al Sayab Teaching Hospital, Al Basra Maternity and Children's Hospital, Al Mawani Teaching Hospital, Al Sadr Teaching Hospital, and Al Fayhaa Teaching Hospital.

University of Basrah, Bas J Surg, 2024; 30(1)
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Data were collected from October 1, 2023, to November 30, 2023. Ninety-seven resident doctors from these hospitals, who agreed to participate in the study, were included.

Conversely, doctors diagnosed with psychological disorders, those taking any antipsychotic medications, and those with less than one year of experience were excluded from the study.

Approval from the ethics committee at Al-Zahraa Medical College was obtained. The enrolled doctors were fully informed about the study's significance, and verbal consent was obtained prior to participation. The participants were interviewed, and a standardized questionnaire was used for data collection.

The questionnaire encompassed the following aspects:

Sociodemographic characteristics: Age, gender, residency, marital status, and smoking status.

Job characteristics: Years of work experience, job title, specialty, and whether they had night shifts or weekend work.

Medical profile: Any history of chronic illnesses and long-term medication use.

The Workplace Stress Scale (WSS) was utilized to measure stress levels among doctors. The scale consists of 8 questions, with responses rated as (Never=1, Rarely=2, Sometimes=3, Often=4, Very Often=5). The overall score was interpreted as follows: a score of 15 or lower indicates that individuals are relatively calm; a score between 16 and 20 indicates low stress; a score between 21 and 25 indicates moderate stress; and a score of 26 or above indicates severe stress. [12]

Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) version 26. Quantitative data were presented as mean ± standard deviation, while qualitative data were presented as frequencies and percentages. The level of significance (p-value) was set at ≤ 0.05.

Results

The study involved 97 resident doctors at Al Basrah center hospitals. Their mean age was 31.04 years and those aged 30-34 years old formed the highest percentage of them. More than 50% of the respondents were females, married (64.9%), living in an urban area (89.7%). Regarding whether they have children 49.5% of them answered yes. And most of them have 1-2 children 75.5%. Most of the participant's doctors were nonsmokers 86.6%. Table 1 shows all the above data.

Table I: The Socio-Demographic Variables Of The Doctors.

Variables		No.	%
Age	Mean ± Sd	31.04 ± 4.8	
	25-29	37	38.1
	30-34	44	45.5
	35-39	10	10.3
	>40	6	6.2
Gender	Female	67	69.1
	Male	30	30.9
Residency	Rural	10	10.3
	Urban	87	89.7
Maraital status	Single	32	33.0
	Married	63	64.9
	Divorced	2	2.1
Do you have children	Yes	49	49.5
	No	48	50.5
No. of children	1-2	37	75.5
	> 3	12	24.5
Smoking	Nonsmoker	84	86.6
	smoker	13	13.4

Table II shows the work-related variables distribution. The Mean of the years of service was 5.46 years. Nearly half of the participants were senior residents and the other half were junior residents. The senior doctors were asked about their specialty and 66.0% of them study in a clinical medical branch. The mean working hours was 62.35 hours per week, 71.1% of them had a night shift, and 73.8% worked at weekends.

Table II: The Work-Related Variables Distribution

Variables		No.	%
Work services in years	Mean ± Sd	5.46 ±1.53	
Job title	Junior	47	48.5
	Senior resident	50	51.5
Branch for senior resident	Clinical	33	66.0
	Basic	17	34.0
Working hours /week	Mean ± Sd	62.35 ±13.65	
Any Night shift	Yes	69	71.1
	No	28	28.9
Do you work at the weekend	Yes	71	73.8
	No	26	26.8

University of Basrah, Bas J Surg, 2024; 30(1)
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Figure 1 shows the stress level of participants' doctors. Most of them were at low stress 43%, those who were relatively calm formed 31%, followed by those with moderate stress 16%, and finally, those with severe stress formed only 10%.

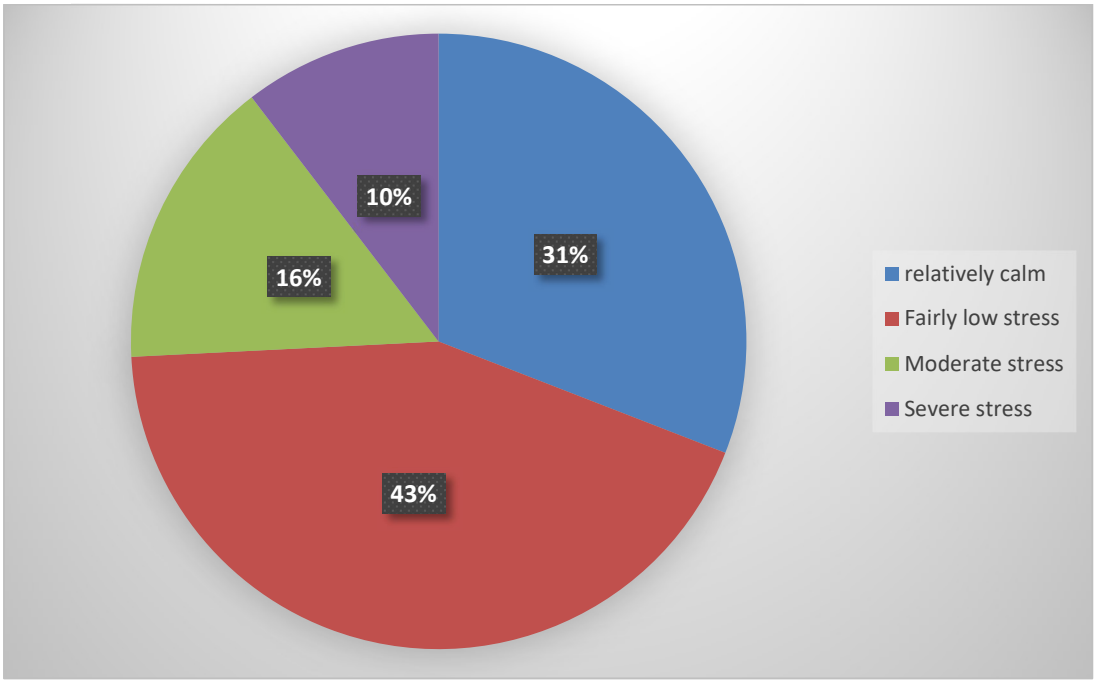

Figure 1 the stress level distribution among the participant doctors.

The association between sociodemographic variables and stress levels is shown in Table 3. There is a significant association between age and stress scale since p-value = 0.045. It was found that the age group (25-29) years old experienced significantly higher stress and this stress decreased with ageing. Concerning gender, Males experienced significantly higher levels of job stress than females (25.67± 15.8, 19.0 ±12.2 for males and females respectively). And this difference is statistically significant p=0.026. There was no significant association between residency with stress scale p-value >0.05. similarly for the marital status and the stress, the p-value = 0.699. Results showed a significant association between stress and having children as p-value = 0.032. Those having children showed a higher level of stress. However, the number of children

University of Basrah, Bas J Surg, 2024; 30(1)
Document Type : Research Paper, Doi: https://doi.org/10.33762/bsurg.2024.150034.1077

showed no significant association with stress p-value =0.191. There were statistically significant differences in stress levels among smoker and nonsmoker doctors since p-value =0.01

Table III: The Association Between Sociodemographic Variables And Stress Scale

Variables		Mean ±SD	p-value
Age	25-29	25.86 ±13.5	0.045
	30-34	18.68 ±12.7	
	35-39	17.9 ±10.1	
	>40	14.2 ±8.6	
Gender	Female	19.0 ±12.2	0.026
	Male	25.67± 15.8	
Residency	Rural	16.9± 12.6	0.314
	Urban	19.54 ±13.8	
Maraital status	Single	22.75± 12.7	0.699
	Married	20.25± 14.4	
	Divorced	19.5 4.9	
Do you have children	Yes	24.1 ±12.8	0.032
	No	18.12 ±10.1	
No. of children	1-2	14.53 ±10.6	0.191
	>3	20.1 ±14.4	
Smoking	Smoker	30.1± 15.8	0.01
	Nonsmoker	19.66 ±12.9	

Table IV shows the work-related variables association with the stress scale. The correlation between the work experience and the stress scale was assessed and its negative correlates (R=-0.256), and this correlation is statistically significant p-value= 0.09. There's no significant statistical difference was found among participants regarding the job title. Concerning Junior doctors experienced slightly higher levels of job stress than resident doctors. Furthermore, regarding the Branch of senior residents. There were no significant differences between clinical and basic senior residents since p =0.602. There was a significant positive correlation between the 'stress scale' and 'working hours/week'

University of Basrah, Bas J Surg, 2024; 30(1)
Document Type : Research Paper, Doi: https://doi.org/10.33762/bsurg.2024.150034.1077

scales (r =0.241, p= 0.017). A significant association between the night shifts and working at the weekend with increasing the stress scale (p-value= 0.036, 0.05 for them respectively).

Table IV:Work experience relation with stress scale

Variables		Mean ±SD	p-value
Work experience		- 0.256*	0.009
Job title	Junior	23.1± 14.7	0.160
	Senior resident	19.2 ± 13.1	
Branch for senior resident	Clinical	18.6 ±10.1	0.602
	Basic	16.76 ±11.3	
Working hours /week		0.241*	0.017
Any Night shift	Yes	22.9 ± 13.7	0.036
	No	16.5 ± 10.7	
Do you work at the weekend	Yes	22.6 ± 13.9	0.05
	No	16.8 ± 12.2	
*Pearson correlation			

Discussion:

The purpose of this study was to estimate the prevalence of stress among resident doctors in Basrah, south of Iraq. The findings that were identified from data collection indicate that a large percentage of resident doctors in Basrah suffer from stress constituting 68% regardless its' level and that is parallel with other surveys conducted on twenty main general hospitals in Iraq which is logical and explained by the analogical health care systems overall the county and the result is slightly higher than a study performed in Karbala, central of Iraq where the level was 52.7% but much higher than what is reported in another study from Kut, in which the level is only 7.5 % .[13-15] In our study, the largest share complained from minimal (low)stress (43 %) which is not comparable to the previous two studies where participants complained of severe stress and burnout .[14,15]

In different places within the Middle East, burnout was found to be quite common among health workers in Tunisia, Saudi Arabia and a quarter of the health professionals in Egypt had suffered from high levels of burnout which is comparable to data analysis of our study even though the health care systems are quite different but multiple parallel causative factors could play role. In contrast, a study conducted in Qatar found that only 12.6% of responding primary care physicians experienced burnout .[16-19] Globally, a study in the USA showed

a compatible percentage up to 64 % of physicians are under stress. [20]

In the matter of demographics, the majority of the participant in the current study had entered the third decade of life (30-34 years old) and those who were 30-35 years old were significantly associated with work-related stress which could be explained by their less experience in handling job hurdles. The female responders are more than males though males experience higher levels of work-related stress, and this could be because the night shift is assigned to male resident doctors than females.

Although participants are mainly married which is likely to be in the age group with a higher percentage facing work-related stress, though no significant association between marital status and job stress.

On the other hand, about half of the participants have children and their stress is significantly associated with this regardless of the number of children. This is likely to be explained by their concern about their family issues and children's wellbeing which increases the risk of workplace-related stress. Smoking is significantly associated with stress. Almost all these socio-demographic findings apart from marital status are comparable to multiple studies.[13,14,16,18]

Regarding the work-related variables assessed in this study, the participants are mainly senior resident doctors, of the clinical branch, with working hours more than 62/ week, covering night shifts and working at the weekend increasing years of work and workload. This is almost like a review of three studies accomplished in Erbil, Saudi Arabia, and the USA .[21-23]

Conclusion:

The study indicates that various factors, including socio-demographic and work-related factors, play a significant role in determining the work-related stress levels of resident doctors. Fortunately, even the overall level of stress among doctors was relatively high but the majority experienced low stress levels. However, it is important to pay special attention to certain groups of doctors who are at a higher risk of experiencing work-related stress, such as younger age groups, single, and male doctors, those with children and doctor's high workloads, covering night shifts and working at the weekend.

Recommendation:

The work-related stress is not considered seriously. While it needs to be well estimated

as an occupational hazard among healthcare workers. Performing larger studies that include a variety of healthcare workers with larger sample sizes to estimate the problem more properly.

We recommend Paying special attention to doctors who express high-stress levels. Adjusting the working hours for doctors in Iraq is highly recommended to avoid work-related stress.

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