Original Research Article

Prevalence of Depression and Anxiety Among Doctors Working in Emergency Units in Al-Madinah, Saudi Arabia, 2021

Abstract:

Background: Depression and anxiety are familiar for most people these days . Almost no one in this world is free from these "Anxiety" and "Depression"**.** Demanding profession has been associated with poor psychological health due to multiple factors such as overworking hours and night shifts. **Objective**: To estimate the prevalence of Depression and anxiety among doctors working in emergency units in Al-madinah, 2021 and to correlate the level of Depression and anxiety according sociodemographic variations and work-related variation **Methods:** A descriptive cross-sectional study was conducted in Al-Madinah city. All doctors who working in emergency department in governmental and private hospitals in Al-Madinah City during the study period was included. **Results**: the score of depression level was normal in 46.5% of our participants, abnormal in 26.2% and borderline abnormal in 27.2%. The score of anxiety level was normal in 23.3% of our participants and borderline abnormal in 26.7% and was abnormal in 50.0%. There is significant correlation between anxiety and marital status, number of children, average monthly income, hospital type, position and specialty ($P<0.05$). There is significant correlation between anxiety and nationality, number of children, average monthly income, hospital type, position and specialty ($P<0.05$). **Conclusion**: We have shown that ER physicians are at high risk of experiencing anxiety and depressive symptoms. There is significant correlation between anxiety and depression and number of children, average monthly income, hospital type, position and specialty.

Keywords: Prevalence, Depression, Anxiety, Doctors, Emergency Units, Al-Madinah, Saudi Arabia

Introduction:

Depression and anxiety are familiar for most people these days. Almost no one in this world is free from these “Anxiety” and “Depression”. Depression and anxiety as some of diseases in medicine are underestimated, under-diagnosed and under-treated so we called that an iceberg phenomenon. (1)

Although hypertension, diabetes, and arthritis can cause disability, depression and anxiety also can cause that as great as other medical conditions like broken relationships, commit ting suicide and substance abuse, therefore can affect job performance and health care service by increase absenteeism and clinical error thus obtained low quality of patient care and safety. (2.3.4)

Emergency department doctors dealing with acutely ill, traumatic patients and cases of death. That type of service makes them under of emotional stress which was identified as one of the occupational hazards of the doctors in the emergency department. psychosomatic disturbances will result if this stress still continue facing doctors in emergency unit. (5)

A Study done in turkey to asses depression and anxiety prevalence among doctors working in emergency units they found the prevalence of anxiety was 14.6% and depression was 15.1%. So, they concluded that this number of prevalence is worthy to make further researches to find the factors leading to depression and anxiety among doctors working in emergency department. (6)

In Saudi Arabia there was study in Makkah Al-Mokarramah hospitals to evaluate the prevalence of depression among doctors working in emergency unit. the prevalence of depression was 47%. The mild form represented 51 %, moderate form was 40.4 % and severe form was 8.5%. (2)

Another study was in Jeddah to screen and assess the severity of generalized anxiety disorder among emergency health workers personnel. The results of this study indicated that 52% of the subjects were observed with an anxiety disorder. However, moderate to mild degrees of anxiety disorder was identified among 20.7% and 23.7% of the subjects, respectively. Severe anxiety disorder was found among 7.6% of the respondents. (5)

Despite the considerable prevalence of these study to which will affect safety and level of care in our hospitals, there are insufficiently studies to find the prevalence of depression and anxiety among doctors working in emergency unit in Saudi Arabia as national level. The aim of this study to determine the level of depression and anxiety, among doctors working in emergency units in Almadinah.

General objective:

To estimate the prevalence of Depression and anxiety among Doctors working in emergency unit in Almadinah 2021 and to correlate the level of Depression and anxiety according sociodemographic variations and work related variation

Methodology:

Study design

A descriptive cross-sectional.

Study area

The study was conducted in Al-Madinah city in the north western area of Saudi Arabia. It is the second holist city in Islam. it is known to have the mosque of prophet Mohammed (peace be upon him) which millions of Muslims visit it every year. It has area of 589 square kilometers ,190 kilometers east of the red sea. the total population is approximately 2,188,138 (2018). (8)

Study population

All doctors who working in emergency departments in Governmental and privates hospitals in Al-Madinah City during the study time period.

Inclusion criteria:

All doctors who start working in emergency departments equal or more than two weeks either during they specialize in emergency medicine or GP.

Exclusion criteria

All doctors start working in emergency department less than two weeks and doctors who specialize other than Emergency Medicine.

Sample size

Total coverage of almost all doctors who working in emergency department in government and private hospitals in Al-Madinah city was invited to participate in this study.

Sampling technique

Total coverage technique was used for which all doctors working in emergency unit and fulfilling the inclusion criteria were involved in the study.

Study tool:

Data was collected from each doctor who fulfill inclusion criteria through an interview by using validated questionnaire after taken a verbal and written consent, the questionnaire was used in English language. the questionnaire consist of three section,

the first section included sociodemographic data which included gender, age, marital status, the number of dependent children if married or divorced and average income, Section two consisted of work-related characteristics like included type of hospital (governmental or private), specialty, position, the level achieved so far in the specific curriculum of each specialty, the number of shifts per month and the total number of working hours per shift , is there enough number of physicians per shift , who many doctors in shift. Last section included the HAD score. which was developed by Zigmond and Snaith. (9) It is a brief questionnaire (containing 14 items) that was originally designed to identify emotional disturbances in non-psychiatric patients treated at hospital clinics. It is a self-report rating scale designed to measure both anxiety and depression. It consists of two subscales, each containing seven items on a 4-point Likert scale (ranging from 0 to 3). Participants were told that the questions asked were related to their mental state during the last two weeks. Then calculated the number to formulate categorical result.

Data entry and analysis

The statistical analysis was done by using the SPSS software (version 22). Chi square test was used as the test of significance. Relations was considered significant if p-value (less than 0.05).

Pilot study

The questionnaire was distributed to some doctors who work in emergency department to assess the applicability and feasibility of the questionnaire and to estimate the time that consumed to complete the questionnaire. All those doctors who participated in this pilot study, was excluded from main study.

Ethical consideration

The research proposal was submitted to the research ethical committee for approval. The ethical approval latter was attached to each questionnaire which state that the participation in the study is voluntary and confidentiality of participant was granted and no name needed. Also, the consent was taken from each participant by sign in first page of the questionnaire. All data after finish research steps will keep in locker or destroyed.

Results

Table (1) showed the socio-demographic data of the participants. We included a total of randomly taken 202 participants who filled our questionnaire according to the inclusion criteria. Most of our participants (68,3%) were males and (31,7%) of them were females. Only 49,0% of the participants were from 25-to 29 years old, 39,6% of them were between 30 and 34 years old and 3,5% were between 35-40 years old. 7,9% were more than 40 years old. Most of our participants (63.4%) were from Saudi Arabia. Most of our participants (55.0%) were married. Most of our participants (71.8%) didn't have any children while 3.5% had one child 9.4 %had two children 9.4% had three children 5.9 %had four children. 17,8 of our participants have an Average income (Monthly) less than 10000 SAR. 27.7of our participants have an average income (Monthly) between 10000 and 14000. 81.2% of the hospital type was governmental 82,2 of the position was resident and 67.8% of the specialty was GP (general).

Table (2) shows the work-related characteristics of the participants. 52.5% of our participants spent 1 year working in the emergency unite. There was a significant association between years of experience with anxiety and depression (P= 0.001). Number of shifts per month was from 11 to 20 by the rate of 64.4% (with association with both anxiety and depression (P= 0.001 and P= 0.041 respectively). 83.7% of the total number of working hours per shift was 8 hours 70.8% (with association with both anxiety and depression) of our participants answer that there aren't enough numbers of physicians per shift, 23.8% of our participants absent one day per year from work because stress of work (less absence days were associated with anxiety and depression P= 0.011), 66.3% have experienced a violent incident at work (with association with anxiety only).

Table (3) shows the responses of the participants to the items of DAS 42.1% feel tense or 'wound up from time to time occasionally, 43.6% often feel as if they slowed down, 36.6% occasionally get a sort of frightened feeling like 'butterflies' in the stomach, 46.0% get not too badly a sort of frightened feeling as if something awful is about to happen, 44.6% don't take as much care as they should they have lost interest in their appearance, 47.5% can laugh and see the funny side of thing as much as they always could, 47.0% feel restless as they have to be on the move quite a lot. 34.7% of our participants Worrying thoughts go through my mind a lot of the time. 49%of our participants feel cheerful sometimes, 36.6% not very often get sudden feelings of panic, 49.5% not often can sit at ease and feel relaxed, and 42.1% can enjoy a good book or radio or TV program sometimes.

Table (4) shows the score of depression level was normal in 46.5% of our participants, abnormal in 26.2% and borderline abnormal in 27.2%.

Table (5) shows the score of anxiety level was normal in 23.3% of our participants. borderline abnormal in 26.7% and was abnormal in 50.

Table (6) shows that there is significant correlation between anxiety and marital status, number of children, average monthly income, hospital type, position and specialty (P<0.05).

Table (7) shows that there is significant correlation between depression and nationality, number of children, average monthly income, hospital type, position and specialty (P<0.05).

Table (1): Sociodemographic characteristics of participants (n=202)

Parameter		***No.***	***Percent***
Gender	Male	138	68.3
	Female	64	31.7
Age	25-29	99	49.0

	30-34	80	39.6
	35-40	7	3.5
	>40	16	7.9
Nationality	Saudi	128	63.4
	Non-Saudi	74	36.6
Marital status	Married	111	55.0
	Single	91	45.0
Number of children	0	145	71.8
	1	7	3.5
	2	19	9.4
	3	19	9.4
	4	12	5.9
Average income (Monthly)	Less than 10,000 SAR	36	17.8
	10,000 -14,000 SAR	56	27.7
	15,000 -19,000 SAR	74	36.6
	20,000 -24,000 SAR	13	6.4
	More than 24,000 SAR	23	11.4
Hospital Type	Governmental	164	81.2
	Private	38	18.8
Position	Consultant	19	9.4
	Resident	166	82.2
	Specialist	17	8.4
Specialty:	ER	65	32.2
	GP (General Practitioner)	137	67.8

Table (2): work related characteristics of the participant physicians (n=202).

Parameter		***n***	***%***	***Association with Anxiety (P Value)***	***Association with Depression (P Value)***
Experience in ED in years	1	106	52.5	0.001	0.001
	2-5	37	18.3		
	6-10	44	21.8		
	>10	11	5.4		
Number of shifts per month	1 –10	24	11.9	0.001	0.041
	11 – 20	130	64.4		
	21 - 30	48	23.8		

Total number of working hours per shift	1	9	4.5	0.001	0.001
	8	169	83.7		
	9	20	9.9		
	24	4	2.0		
Enough numbers of physicians per shift	Yes	59	29.2	0.206	0.001
	No	143	70.8		
Number of doctors cover in a shift	0	18	8.9	0.001	0.001
	1 – 3	92	45.5		
	4 – 6	57	28.2		
	7- 9	30	14.9		
	10 – 13	5	2.5		
Number of absent days per year from work because stress of work	0	104	51.5	0.001	0.001
	1-7	85	42.1		
	24-36	13	6.4		
Experienced a violent incident at work	Yes	134	66.3	0.001	0.065
	No	68	33.7		

Table (3): responses of the participants to the items of DAS (N=202)

Parameter		*No.*	*Percent*
I feel tense or 'wound upâ€™	Most of the time	49	24.3
	A lot of the time	53	26.2
	From time to time (occasionally)	85	42.1
	Not at all	15	7.4
I feel as if I am slowed down:	Nearly all the time	19	9.4
	Very often	88	43.6
	Sometimes	68	33.7
	Not at all	27	13.4
I still enjoy the things I used to enjoy:	Definitely as much	48	23.8
	Not quite so much	121	59.9
	Only a little	22	10.9
	Hardly at all	11	5.4
I get a sort of frightened feeling like 'butterflies' in the stomach:	Occasionally	74	36.6
	Quite Often	53	26.2
	Very Often	8	4.0
	Not at all	67	33.2
I get a sort of frightened feeling as if	A little, but it	46	22.8

something awful is about to happen:	doesn't worry me		
	Very definitely and quite badly	25	12.4
	Yes, but not too badly	93	46.0
	Not at all	38	18.8
I have lost interest in my appearance:	I don't take as much care as I should	90	44.6
	I may not take quite as much care	35	17.3
	I take just as much care as ever	55	27.2
	Definitely	22	10.9
I can laugh and see the funny side of things:	As much as I always could	96	47.5
	Definitely not so much now	42	20.8
	Not quite so much now	54	26.7
	Not at all	10	5.0
I feel restless as I have to be on the move:	Not very much	59	29.2
	Quite a lot	95	47.0
	Very much indeed	42	20.8
	Not at all	6	3.0
Worrying thoughts go through my mind:	A great deal of the time	30	14.9
	A lot of the time	70	34.7
	From time to time, but not too often	64	31.7
	Only occasionally	38	18.8
I look forward with enjoyment to things:	As much as I ever did	60	29.7
	Definitely less than I used to	33	16.3
	Hardly at all	17	8.4
	Rather less than	92	45.5

I feel cheerful:	I used to		
	Most of the time	19	9.4
	Not often	60	29.7
	Sometimes	99	49.0
	Not at all	24	11.9
I get sudden feelings of panic:	Quite often	45	22.3
	Not very often	74	36.6
	Very often indeed	19	9.4
	Not at all	64	31.7
I can sit at ease and feel relaxed:	Definitely	37	18.3
	Not at all	9	4.5
	Not Often	100	49.5
	Usually,	56	27.7
I can enjoy a good book or radio or TV program:	Often	54	26.7
	Not often	44	21.8
	Sometimes	85	42.1
	Very seldom	19	9.4

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Table (4): Depression Score among the participants (N=202)

Normal	**94**	**46.5**
Borderline abnormal	**55**	**27.2**
Abnormal	**53**	**26.2**

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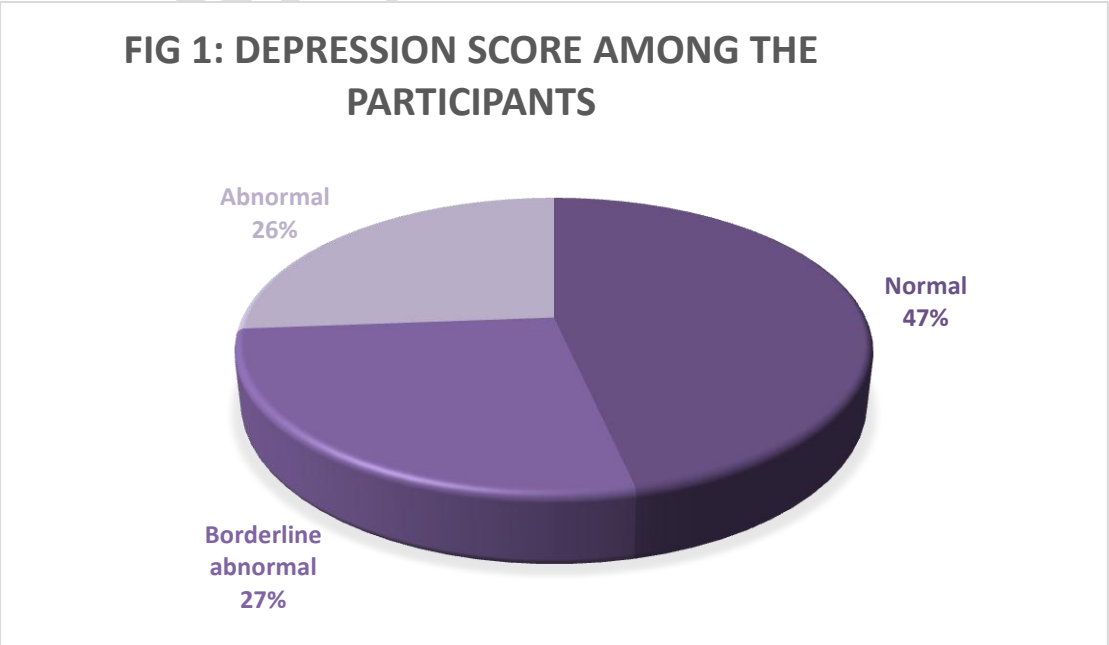

Table (5): Anxiety Score among the participants (N=202)

Normal	**47**	**23.3**
Borderline abnormal	**54**	**26.7**
Abnormal	**101**	**50.0**

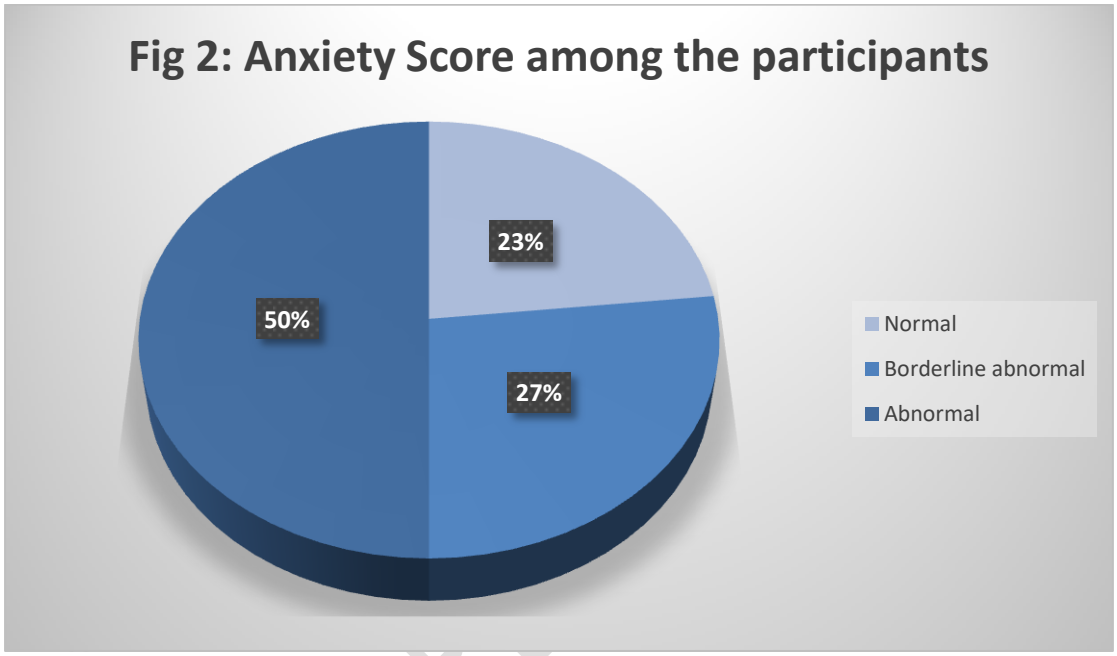

Table (6): Relationship between anxiety and socio-demographic characteristics of the participants (n=202)

		Anxiety			*Total (N=202)*	*P value*
		Normal	**Borderline abnormal**	**Abnormal**		
Gender	**Male**	30	37	71	138	**0.733**
		63.8%	68.5%	70.3%	68.3%	
	Female	17	17	30	64	
		36.2%	31.5%	29.7%	31.7%	
Age	**25-29**	25	21	53	99	**0.006**
		53.2%	38.9%	52.5%	49.0%	
	30-34	14	32	34	80	
		29.8%	59.3%	33.7%	39.6%	
	35-40	1	0	6	7	
		2.1%	0.0%	5.9%	3.5%	
	>40	7	1	8	16	

		14.9%	1.9%	7.9%	7.9%	
Nationality	**Saudi**	27	32	69	128	**0.338**
		57.4%	59.3%	68.3%	63.4%	
	Non-Saudi	20	22	32	74	
		42.6%	40.7%	31.7%	36.6%	
Marital status	**Married**	33	33	45	111	**0.008**
		70.2%	61.1%	44.6%	55.0%	
	Single	14	21	56	91	
		29.8%	38.9%	55.4%	45.0%	
Number of children	**0**	33	34	78	145	**0.001**
		70.2%	63.0%	77.2%	71.8%	
	1	5	1	1	7	
		10.6%	1.9%	1.0%	3.5%	
	2	9	0	10	19	
		19.1%	0.0%	9.9%	9.4%	
	3	0	18	1	19	
		0.0%	33.3%	1.0%	9.4%	
	4	0	1	11	12	
		0.0%	1.9%	10.9%	5.9%	
Average income (Monthly)	**Less than 10,000 SAR**	13	4	19	36	**0.001**
		27.7%	7.4%	18.8%	17.8%	
	10,000 -14,000 SAR	0	19	37	56	
		0.0%	35.2%	36.6%	27.7%	
	15,000 -19,000 SAR	17	30	27	74	
		36.2%	55.6%	26.7%	36.6%	
	20,000 -24,000 SAR	2	1	10	13	
		4.3%	1.9%	9.9%	6.4%	
	More than 24,000 SAR	15	0	8	23	
		31.9%	0.0%	7.9%	11.4%	
Hospital Type	**Governmental**	36	36	92	164	**0.001**
		76.6%	66.7%	91.1%	81.2%	
	Private	11	18	9	38	
		23.4%	33.3%	8.9%	18.8%	
Position	**Consultant**	14	0	5	19	**0.001**
		29.8%	0.0%	5.0%	9.4%	
	Resident	31	54	81	166	

		66.0%	100.0%	80.2%	82.2%	
	Specialist	2	0	15	17	
		4.3%	0.0%	14.9%	8.4%	
Specialty:	**ER**	31	6	28	65	**0.001**
		66.0%	11.1%	27.7%	32.2%	
	GP (General Practitioner)	16	48	73	137	
		34.0%	88.9%	72.3%	67.8%	

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Table (7): Relationship between depression and socio-demographic characteristics of the participants (n=202).

		Depression			***Total (N=202)***	***P value***
		Normal	**Borderline abnormal**	**Abnormal**		
Gender	**Male**	58	38	42	138	**0.089**
		61.7%	69.1%	79.2%	68.3%	
	Female	36	17	11	64	
		38.3%	30.9%	20.8%	31.7%	
Age	**25-29**	58	21	20	99	**0.001**
		61.7%	38.2%	37.7%	49.0%	
	30-34	28	33	19	80	
		29.8%	60.0%	35.8%	39.6%	
	35-40	1	1	5	7	
		1.1%	1.8%	9.4%	3.5%	
	>40	7	0	9	16	
		7.4%	0.0%	17.0%	7.9%	
Nationality	**Saudi**	74	30	24	128	**0.001**
		78.7%	54.5%	45.3%	63.4%	
	Non-Saudi	20	25	29	74	
		21.3%	45.5%	54.7%	36.6%	
Marital status	**Married**	48	30	33	111	**0.423**
		51.1%	54.5%	62.3%	55.0%	
	Single	46	25	20	91	
		48.9%	45.5%	37.7%	45.0%	
Number of children	**0**	79	35	31	145	**0.001**
		84.0%	63.6%	58.5%	71.8%	
	1	6	0	1	7	
		6.4%	0.0%	1.9%	3.5%	

	2	9	1	9	19	
		9.6%	1.8%	17.0%	9.4%	
	3	0	18	1	19	
		0.0%	32.7%	1.9%	9.4%	
	4	0	1	11	12	
		0.0%	1.8%	20.8%	5.9%	
Average income (Monthly)	**Less than 10,000 SAR**	15	6	15	36	**0.001**
		16.0%	10.9%	28.3%	17.8%	
	10,000 -14,000 SAR	17	29	10	56	
		18.1%	52.7%	18.9%	27.7%	
	15,000 -19,000 SAR	44	12	18	74	
		46.8%	21.8%	34.0%	36.6%	
	20,000 -24,000 SAR	3	8	2	13	
		3.2%	14.5%	3.8%	6.4%	
	More than 24,000 SAR	15	0	8	23	
		16.0%	0.0%	15.1%	11.4%	
Hospital Type	**Governmental**	83	37	44	164	**0.006**
		88.3%	67.3%	83.0%	81.2%	
	Private	11	18	9	38	
		11.7%	32.7%	17.0%	18.8%	
Position	**Consultant**	15	0	4	19	**0.001**
		16.0%	0.0%	7.5%	9.4%	
	Resident	66	55	45	166	
		70.2%	100.0%	84.9%	82.2%	
	Specialist	13	0	4	17	
		13.8%	0.0%	7.5%	8.4%	
Specialty:	**ER**	37	3	25	65	**0.001**
		39.4%	5.5%	47.2%	32.2%	
	GP (General Practitioner)	57	52	28	137	
		60.6%	94.5%	52.8%	67.8%	

Discussion:

In this study we aimed to estimate the prevalence of depression and anxiety among doctors working in emergency unit in Almadinah 2021 and to correlate the level of

depression and anxiety according sociodemographic variations and work-related variation**.** In our study we included a sample of 202 working doctors, almost 70% of them were males and most of them (88.6%) were between 25 and 35 years old.

We reported the score of depression level was normal in 46.5% of our participants, abnormal in 26.2% and Borderline abnormal in 27.2%, which is relatively high percentage. While the score of anxiety level was normal in 23,3%of our participants, Borderline abnormal in 26,7% and was abnormal in 50%.

Another study [53] reported that the mean (SD) depression score was lower 10.6 (6.5) and the frequency (%) of depression was 29, however, Yahaya et al (4) reported that the prevalence of anxiety is higher when compared to the normal population (8.2%). However, this finding is consistent with a previous study conducted on doctors and nurses in Johor, the prevalence of anxiety from 17.9% to 25.4% [10].

Gong, Y., et al [8] mentioned that regarding anxiety symptoms, the mean standard SAS score among study participants 43.09% was close to that reported by a previous study that applied SAS to assess anxiety symptoms among physicians [11] (46.8 in male physicians and 46.7 in female physicians). With respect to depressive symptoms, the prevalence among physicians in our study (28.13%) was similar to that reported in a Shanghai-based study among primary-care physicians (31.7%), which used an identical evaluation method [12]. However, the prevalence of depressive symptoms among hospital physicians in the Liaoning Province study was much higher 65.3% [13].

Erdur, B. et al (6) found that approximately 15% of doctors working in emergency units in Denizli had depression. Several previous studies from different parts of Turkey reported a comparable rate of depression among university students (14-15) and medical doctors (16-17). Studies on doctors in the developed world indicating depressive symptomatology yielded results such as 19.3% in the US, 15.5% in Canada and 18.0% in the UK(18-19-20) In a multinational study completed in the UK, US and Australasia, the doctors from UK showed higher work-related stress and depression levels.10 Another observation indicated that the rate of depression among general practitioners was 27% and the rate of suicidal thoughts 13%. The rate of depression among specialists was 19%, whereas it was only 6% among administrators. This study found that approximately 14.6% of doctors working in

emergency units in Denizli had high anxiety scores. These results are consistent with several other studies conducted in Turkey and elsewhere in the world (21, 22)

Male and female doctors showed different but non-significant depression scores in this study. The same observation for sex differentials in anxiety levels was also true. However, anxiety levels in male doctors were higher than those in female doctors. Regarding the age, in this study the incidence of depression and in young doctors was found to be higher than older doctors. Another different result was reported by Erdur et al [6] who found that male and female doctors showed non-significant depression scores in this study, however, anxiety levels in female doctors were different from those in male doctors. Also, the incidence of depression in young female doctors was found to be higher than in their male colleagues in a previous study. [22] In another study despite insignificant findings, we found that those with age 30–39 years old showed a higher level of depression, anxiety and stress compared to the other age groups. [23] Yahya, S.N. et al. [4], reported that nevertheless this study showed age was not associated with depression, anxiety and stress level if workload and emotional stress were controlled. The Emergency Medical Residents Association reported higher average stress levels among female doctors. [23] Also, female doctors showed more frequent depressive symptomatology than their male counterparts. [10]

In our study marital status didn't make any difference in depression score among doctors, while it had a significant relation with anxiety. However, married doctors showed higher depression levels. Several studies from Western countries have indicated that marriage is a preventing factor for depression. In Erdur et al [6], marital status did not make any difference in depression and anxiety scores among doctors in this study. However, divorced doctors showed higher depression and anxiety scores.

A study from the UK reported that the conflict between work life and daily life was a major stressor in the life of a female doctor. On the other hand, another study found that the depression rate in female doctors did not vary from that of the general public, but the rate of successful suicide was much higher. Possible harassment can create an extra source of stress for women in emergency units. Additionally, female doctors are often exposed to stresses associated with discrimination in the workplace (27, 28).

Although financial difficulties and extra responsibilities due to family life may increase the possibility of negatively affecting doctors' psychology, the family's social support mechanisms seem to be at play in preventing depression and anxiety (28).

Yahya, S.N. et al (4) mentioned that Marital status was found to have no association with the prevalence of depression, anxiety or stress among the medical officers. A previous study has suggested marriage was the protective factor against psychological distress. Similarly, this was also reported by a survey among emergency physicians in Canada.[28] A study among doctors after a year after their graduation in Norwegian emphasized in having a stable relationship as a strong predictor of not having suicidal thoughts and planning [19]. It was reported that having a single life is linked to subject oneself to be more vulnerable towards the occurrence of depression, anxiety and stress among the nurses in Hong Kong [27]. On the other hand, a study involving consultants in emergency medicine in United Kingdom has suggested that being married has no role as a protective factor from psychological distress [28]. A study among Malaysian house officers also found that marital status has no correlation with anxiety prevalence [29]. The inconsistent findings might suggest marital status is contextualized and might be influenced by cultures and norms of the society [30]

In this study most of our participants 71.8% didn't have any children while 3.5% had one child 9.4 % had two children 9.4% had three children 5.9 % had four children, and we reported the highest levels of depression and anxiety among those who have no children. Erdur, B. et al [6] reported that, doctors with children showed lower depression and anxiety scores, which is in contrast with our findings. The reason for this is not clear. However, having children may motivate and increase a person's attachment to life.

In our study number of shifts per month was from 11-20 by the rate of 64.4%, 83.7% of the total number of working hours per shift was 8 hours. Yahya , S.N. et al (4) reported that amount of total shift work and night shift has no association with the prevalence of depression, anxiety or stress. Despite it is well known that night shift has effects on efficiency of performance, family and social life, fatigue and potentially psychosocial stressor, it was not demonstrated in this study. Study conducted among emergency physicians in Pittsburgh showed that night shifts increase the exposure

towards reduction of cognitive function and chronic fatigue which may predispose to mental stress.

Gong Y et al (8) reported that additionally, our results indicated that physicians who work at least 60 hours per week or who work night shifts twice or more per week were at greater risk of experiencing anxiety and depressive symptoms, which confirms the findings of previous studies demonstrating a significant positive association between lengthy working hours or frequent shift work and anxiety or depressive symptoms. The documented positive associations between very long working hours (more than 60 hours per week) or too frequent night shifts (twice or more a week) within a short period of time and symptoms of anxiety or depression should be carefully considered by hospital administrators or other parties responsible for scheduling physicians (32, 33).

In our study 66,3% have experienced a violent incident at work, 42.1% feel tense or 'wound up from time to time occasionally, 43.6% often feel as if they slowed down, 36.6% occasionally get a sort of frightened feeling like 'butterflies' in the stomach, 46, 0 get not too badly a sort of frightened feeling as if something awful is about to happen, 44.6% don't take as much care as they should they have lost interest in their appearance, 47.5% can laugh and see the funny side of thing as much as they always could

Gong Y., et al [8] reported that with regards to work-related conditions, workplace violence was a significant predictor of physician's mental health in our fully adjusted models. Physicians who often experienced workplace violence were nearly seven times more likely to be anxious and four times more likely to be depressed compared to those who seldom or never encountered it. Previous studies in Poland and Turkey also demonstrated that workplace violence increases the prevalence of psychological conditions such as anxiety and depression among exposed employees. In our study, more than three-quarters of participants sometimes or often encountered workplace violence. Consequently, the doctor-patient relationship should be improved by the implementation of several measures, including introducing and implementing malpractice insurance for physicians and enhancing doctor-patient communication (33, 34).

This study shows that there is significant correlation between depression and age (p=0.001), nationality (p=0.001), average income (p=0.001), number of children (p=0.001), hospital type (p=0.006), position (p=0.001) and specialty (p=0.001). These results were different than Erdur et al (6) who mentioned that there wasn't significant correlation between depression and age, sex and marital status. Also, Yahaya et al (4) mentioned that there wasn't significant correlation between depression and sex, status, age, working experience, ethnic group, system used, total of shifts and night shifts**.**

In accordance to our results, Mo et al. [35] found that increased working time per week and work intensity were risk factors for poorer MHOs. Our study shows a significant association with experience years with both anxiety and depression. This was inconsistent with several previous studies (1, 36, 37), working experience was not associated with depression, anxiety and stress. Similar pattern of finding was observed in other profession, which showed working experience has no correlation to the development of mental health disturbance at workplace (38, 39). In contrast, a previous study conducted on house officers in West Malaysia reported that an increased month of working experience was associated with decreased depression level, and it was thought due to the increased coping experience with the task and duties (40). Another study conducted among house officers in US showed depressive symptoms were declined with each successive years during the training process (41).

Conclusion

We have shown that ER physicians are at high risk of experiencing anxiety and depressive symptoms. The doctor-patient relationship was a potent source of stress. There is significant correlation between anxiety and depression and number of children, average monthly income, hospital type, position and specialty. So, measures must be taken to decrease the stress sources and workload in the ERs.

References

Atif K, Khan HU, Ullah MZ, Shah FS, Latif A. Prevalence of anxiety and depression among doctors; the unscreened and undiagnosed clientele in Lahore, Pakistan. Pakistan journal of medical sciences. 2016 Mar;32(2):294.

Al-Zahrani AH, Kalo BB. Depression among emergency room physicians and its associated factors in Makkah Al-Mokarramah Hospitals. International Journal of Medical Science and Public Health. 2014 Dec 1;3(12):1501-7.

Lecrubier Y. The burden of depression and anxiety in general medicine. The Journal of clinical psychiatry. 2001.

Yahaya SN, Wahab SF, Yusoff MS, Yasin MA, Rahman MA. Prevalence and associated factors of stress, anxiety and depression among emergency medical officers in Malaysian hospitals. World journal of emergency medicine. 2018;9(3):178.

Alharthy N, Alrajeh OA, Almutairi M, Alhajri A. Assessment of anxiety level of emergency health-care workers by generalized anxiety disorder-7 tool. International Journal of Applied and Basic Medical Research. 2017 Jul;7(3):150.

Erdur B, Ergin A, Turkcuer I, Parlak I, Ergin N, Boz B. A study of depression and anxiety among doctors working in emergency units in Denizli, Turkey. Emergency Medicine Journal. 2006 Oct 1;23(10):759-63.

KOCAK M, Osman Avsar GU, AYDIN H, ACIKSARI K, OZUCELIK DN. Frequency of Anxiety Among Physicians Working in Emergency Departments and Other Clinics in Turkey: A Cross-Sectional Survey.

Gong, y., Han, T., Chen, W., Dib, H.H., Yang , G., Zhuang, R., Chen, Y., Tong, X., Yin, X., and Lu, Z.,(2014): Prevalence of Anxiety and Depressive Symptoms and Related Risk Factors among Physicians in China: A Cross-Sectional Study https://doi.org/10.1371/journal.pone.0103242 .

9-Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta psychiatrica scandinavica. 1983 Jun;67(6):361-70.

Maideen SFK, Sidik SM, Rampal L, Mukhtar F. Prevalence, associated factors and predictors of anxiety:a community survey in Selangor, Malaysia. BMC Psychiatry. 2015;15(1):1. [PMC free article] [PubMed] [Google Scholar[

Sun W, Fu J, Chang Y, Wang L (2012) Epidemiological study on risk factors for anxiety disorder among Chinese doctors. J Occup Health 54: 1–8.

Shen LL, Lao LM, Jiang SF, Yang H, Ren LM, et al. (2012) A survey of anxiety and depression symptoms among primary-care physicians in China. Int J Psychiatry Med 44: 257–270.

13. Wang , Sun W, Chi TS, Wu H, Wang L (2010) Prevalence and associated factors of depressive symptoms among Chinese doctors: a cross-sectional survey. Int Arch Occup Environ Health 83: 905–911.

14. Taysi B N, Azizoglu F, Percinel S.et al The evaluation of depression prevalence with Beck Depression Inventory among the intern doctors during the 1992–1993 academic period. (In Turkish). Soc Physician 19945968–74. [Google Scholar[

15. Aydin G, Demir A. The prevalence of depressive symptoms in Middle East Technical University Students. (In Turkish). J Hum Sci 1989827–40. [Google Scholar[

16. Babayigit Z, Ozden Y, Aslan V. Anxiety and depression levels of physicians working in three different clinics. (In Turkish). 5th National Public Health Congress. Istanbul: Marmara University, 1996686–689.

17. Ozbay M H, Goka E, Soygur H ve ark Anxiety and depression levels of physicians. (in Turkish). 3P J 19933221–231. [Google Scholar[

18. Gallery W E, Whitley T W, Klonis L K.et al A study of occupational stress and depression among emergency physicians. Ann Emerg Med 19922158–64.

19. Lloyd S, Streiner D, Shannon S. Burnout, depression, life and job satisfaction among Canadian emergency physicians. J Emerg Med 199412559–565. [

20. Burbeck R, Coomber S, Robinson S M.et al Occupational stress in consultants in accident and emergency medicine: a national survey of levels of stress at work. Emerg Med J 200219234–238. [PMC free article] [PubMed] [Google Scholar[

21. Babayigit Z, Ozden Y, Aslan V. Anxiety and depression levels of physicians working in three different clinics. (In Turkish). 5th National Public Health Congress. Istanbul: Marmara University, 1996686–689.

22. Caplan R P. Stress, anxiety, and depression in hospital consultants, general practitioners, and senior health service managers. BMJ 19943091261–1263.

23. Hall KN, Wakeman MA, Levy RC, Khoury J. Factors associated with career longevity in residency-trained emergency physicians. Ann Emerg Med. 1992;21(3):291–7

24. Godlee F. Stress in junior doctors. 2–Stress in women doctors. BMJ 199030176

Whitley T W, Gallary M E, Allison E J., Jret al Factors associated with stress among emergency medicine residents. Ann Emerg Med 1989181157–1161.

Linn L S, Yager J, Cope D W.et al Factors associated with life satisfaction among practicing internist. Med Care 198624830–837.

Farahmand S, Karimialavijeh E, Vahedi HS, Jahanshir A. Emergency medicine as a growing career in Iran:an Internet-based survey. World J Emerg Med. 2016;7(3):196–202. [PMC free article] [PubMed] [Google Scholar[

Tyssen R, Vaglum P, Grønvold NT, Ekeberg Ø. Suicidal ideation among medical students and young physicians:a nationwide and prospective study of prevalence and predictors. J Affect Disord. 2001;64(1):69–79. [PubMed] [Google Scholar[

Cheung T, Yip PS. Depression, anxiety and symptoms of stress among Hong Kong nurses:a cross-sectional study. Int J Environ Res Public Health. 2015;12(9):11072–100.

Burbeck R, Coomber S, Robinson S, Todd C. Occupational stress in consultants in accident and emergency medicine:a national survey of levels of stress at work. Emerg Med J. 2002;19(3):234–8.

Virtanen M, Kivimaki M (2012) Saved by the bell: does working too much increase the likelihood of depression? Expert Rev Neurother 12: 497–499.

Bannai A, Tamakoshi A (2014) The association between long working hours and health: a systematic review of epidemiological evidence. Scandinavian Journal of Work, Environment and Health 40: 5–18.

Aytac S, Dursun S (2012) The effect on employees of violence climate in the workplace. Work 41 Suppl 13026–3031.

Merecz D, Drabek M, Moscicka A (2009) Aggression at the workplace–psychological consequences of abusive encounter with coworkers and clients. International Journal of Occupational Medicine and Environme tal Health 22: 243–260.

Mo, Y.; Deng, L.; Zhang, L.; Lang, Q.; Liao, C.; Wang, N.; Qin, M.; Huang, H. Work stress among Chinese nurses to support Wuhan in fighting against COVID-19 epidemic. J. Nurs. Manag. 2020, 28, 1002–1009

Goldberg R, Boss RW, Chan L, Goldberg J, Mallon WK, Moradzadeh D, et al. Burnout and its correlates in emergency physicians: four years' experience with a wellness booth. Academic Emergency Medicine. 1996;3(12):1156-64.

Henning MA, Sollers J, Strom JM, Hill AG, Lyndon MP, Cumin D, et al. Junior doctors in their first year: mental health, quality of life, burnout and heart rate variability. Perspectives on Medical Education. 2013;3(2):136-43.

Shani A, Pizam A. Work-related depression among hotel employees. Cornell Hospitality Quarterly. 2009;50(4):446-59.

Pozos Radillo BE, Tórrez López TM, Aguilera Velasco MdLÁ, Acosta Fernández M, González Perez GJ. Stress-associated factors in Mexican dentists. Brazilian oral research. 2008;22(3):223-8.

Shahruddin SA, Saseedaran P, Dato Salleh A, Azmi CAA, Alfaisal NHIM, Fuad MD, et al. Prevalence and Risk Factors of Stress, Anxiety and Depression among House Officers in Kota Kinabalu, Sabah. Education in Medicine Journal. 2016;8(1).

Firth-Cozens J. Interventions to improve physicians' well-being and patient care. Social Science & Medicine. 2001;52(2):215-22