Burnout and sleep quality prevalence and correlation among family medicine residents in Makkah region-2018

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ABSTRACT:

Background: The physicians are at high risk to develop burnout during their profession course. Additionally, prolonged work hours for resident physicians can lead to poor sleep quality, which could potentially affect the entire healthcare and leads to adverse consequences.

Objectives: To asses' magnitude of burnout and poor sleep quality and their correlation among family medicine residents in Makkah Region 2018.

Subjects and methods: A cross-sectional analytical study was carried out included a representative random sample of Family Medicine residents at joint family medicine programs in Makkah region, Saudi Arabia, 2018. A self-administered questionnaire was utilized for data collection. It consists of three parts; Socio-demographic characteristics, Maslach Burnout Inventory (MBI) questionnaire to assess burnout and the Pittsburgh Sleep Quality Index (PSQI) to measure the quality of sleep.

Results: One hundred and sixty (160) family medicine residents participated in the study with a response rate of 90.4%. Poor sleep was reported among the majority (80%) of the participants. The overall prevalence of burnout was 6.3%, whereas the prevalence of high emotional exhaustion was (17.5%), high depersonalization (25.6%), and low personal accomplishment was (93.8%). Only five resident physicians (3.1%) had no burnout in any of the three dimensions. There was no significant association between poor sleep quality and burnout or its dimensions.

Conclusion: Burnout and poor sleep quality are important problems among family medicine residents. It is advisable to take the necessary measures to improve sleep quality and low personal accomplishment among family medicine residents.

Key words: Burnout, Sleep quality, Family medicine residents, PSQI, MBI.
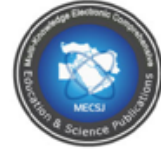
الخلاصة:

المقدمة: يتعرض الأطباء لخطر الاحتراق النفسي أثناء مسيرتهم المهنية إضافة إلى ذلك يمكن أن تؤدي ساعات العمل المطولة للأطباء المقيمين إلى سوء جودة النوم مما قد يؤثر على أنظمة الرعاية الصحية بأكملها ويؤدي إلى عواقب عكسية.

أهداف البحث: تقدير حجم الاحتراق النفسي وسوء جودة النوم وعلاقتهما لدى أطباء الأسرة المقيمين في منطقة مكة المكرمة ٢٠١٨

طرق البحث: أجريت دراسة مسحية تحليلية شملت عينة عشوائية تمثيلية من أطباء الأسرة المقيمين في برامج طب الأسرة المشتركة في منطقة مكة المكرمة، المملكة العربية السعودية، ٢٠١٨. تم استخدام استبيان بمسح ذاتي لجمع البيانات، يتألف من ثلاثة أجزاء، الخصائص الاجتماعية والديموغرافية، استبيان ما سلاك لقياس الاحتراق النفسي ومؤشر بيتسبرغ لقياس جودة النوم.

النتائج: شارك مائة وستون (١٦٠٪) طبيبا مقيما في الدراسة مع معدل استجابة ٤,٩٠ ٪، تقريبا ثلثي من الإناث المشاركين كان لديهم سوء غالبية (٦٥ ٪)، الغالبية منهم (٧,٨٣ ٪) تتراوح أعمارهم بين ٢٥ و ٣٠ سنة، وجد أن جودة النوم (٨٠٪). كان معدل انتشار الاحتراق النفسي الكلي٣. ٦ ٪، في حين كان معدل انتشار النضوب العاطفي الشديد (٥. ١٧) ٪، تبدد الشخصية الشديد (٢٥,٦) ٪، والإنجاز الشخصي المنخفض (٩٣,٨ ٪) خمسة أطباء مقيمين فقط (١. ٣٪) لم يتعرضوا للاحتراق في أي من الأبعاد الثلاثة ، لم يكن هناك ارتباط كبير بين سوء جودة النوم والاحتراق النفسي أو أبعاده.

الاستنتاجات: الاحتراق النفسي وسوء جودة النوم من المشاكل المهمة بين أطباء الأسرة المقيمين في منطقة مكة المكرمة، على وجه الخصوص يعد الإنجاز الشخصي المنخفض مشكلة شائعة للغاية بينهم، يستحسن اتخاذ التدابير اللازمة لتحسين نوعية النوم وانخفاض الإنجاز الشخصي لدى أطباء الأسرة.

INTRODUCTION:

Background:

Work-related stress is a global phenomenon. It does not only affect the healthcare worker but also, it affects the organizations' productivity, the stress occurs when the person's capacity and capability can't match the work demands (Sagar *et al.*, 2017), This stress can exceed to burnout (Kumar, 2016) and affect the sleep quality of healthcare worker(Laethem, 2016).

In the 1970s, First coined by the American psychologist Herbert Freudenberger, the term "burnout" was described as a state of chronic stress leading to physical and emotional exhaustion, cynicism, detachment, feelings of inadequacy, and lack of accomplishment (Muzafar *et al.*, 2015).

Burnout has been conceptualized as a three-dimensional syndrome: Emotional Exhaustion (EE), Depersonalization (DP) and reduced Personal Accomplishment (PA). EE is a 'feelings of being overextended and depleted of one's emotional and physical resources'. DP (cynicism) referred to 'a negative, callous, or excessively detached response to various aspects'. PA is ' feelings of incompetence and a lack of achievement and productivity at work' (Dewa *et al.*, 2017).

The physicians are at high risk to develop burnout during their profession course (Kumar, 2016) Additionally, the effect of burnout may exceed to other doctors (bad relationships with co-colleague) and to the patients (poor decisions, medical error, hostile attitude toward patients) and it potentially affects the entire healthcare systems (Kumar, 2016).

The residents particularly are strongly predispose to burnout, due to Hard work demand, limited control, and a high degree of work-home interference bound in residency training programs (Lefor, 2017).

Poor sleep quality refers to sleep discontinuity and includes one or more of the following symptoms: (i) difficulties initiating sleep, (ii) difficulties maintaining sleep, (iii) waking up too early, or (iv) non-restorative sleep. The Sleep is one of the most powerful opportunities to recover from daily stress (Laethem, 2016).

The Research demonstrates that shorter sleep duration and poorer sleep quality is related to higher psychological stress. (Benham, 2010)

Prolonged work hours for resident physicians can lead to poor sleep quality (Mansukhani *et al.*, 2012).

Very few recent studies had been conducted that explore sleep quality and its association with burnout in the same population. in this study, we examine the relationship between burnout and changes in self-reported sleep disturbance among family medicine residents in Makkah Region.

Aim of the study:

To asses' magnitude of burnout and poor sleep quality and their correlation to improve the health care worker productivity and performance.

Objectives:

Primary objective:

1-To determine burnout prevalence among family medicine residents in Makkah Region, 2018.

2-To determine sleep quality prevalence among family medicine residents in Makkah Region, 2018.

3- To identify the association between burnout and sleep quality among family medicine residents in Makkah Region, 2018.

Rationale:

1- According to researcher experience, the exposure of residents to prolonged work hours and study can make them at risk of burnout and poor sleep quality that may exceed to a numerous negative consequence.

2- Up to the researcher knowledge, there were few previous studies which showed the relationship between burnout and sleep quality in Makkah Region.

3- The researcher chooses family medicine residents because they are the future and they play an integral role in primary health care centers, and researcher is one of them.

LITERATURE REVIEW:

Studies that consider the relation between sleep quality and burnout:

In 2017, a cross-sectional study conducted in Riyadh at King Abdulaziz University on medical students estimated the prevalence and the relation between stress and poor sleep quality among medical students, the result showed significant association and high prevalence of poor sleep quality (76%) and stress (53%) and the risk of poor sleep quality was four times higher in students whose (GPA) was less than 4.25(Almojali *et al.*, 2017)**.**

Burnout studies:

One Cross-sectional analytic, non-published study was conducted in the Joint program of family medicine Makkah city in 2012 by Dr. Sumaiyah Saeed Khan to assess the magnitude of burnout as a health problem and its associated factors in Primary health care Physicians. High EE, High DP and decreased PA reported among (38.2%), (25.2%) and (23.7%) of physicians respectively, the overall prevalence of burnout was (9.9%) while that of modified burnout (high EE and high DP) was (21.4%). Two-thirds of physicians (64.9%) were GPs not certified in Family Medicine (Khan, 2012).

In 2013 N.S. Al-Sareai et al. investigate magnitude and risk factors for burnout among primary health care physicians in Asir province, Saudi Arabia the result showed the following: 29.5% of respondents have high emotional exhaustion, 15.7% high depersonalization and 19.7% low personal accomplishment, with 6.3% scoring high in all three dimensions(Al-Sareai *et al.*, 2013).

Elbarazi et al. in their systemic review study (2017) that included 19 studies (7 papers from Saudi Arabia) for a period from January 1980 to November 2014 in different Arab countries. Assessing burnout amongst healthcare professionals (HCP) in Arab countries, There were multiple studies estimates the prevalence of burnout in three MBI subscales, high Emotional Exhaustion (20.0–81.0%), high Depersonalization (9.2–80.0%), and low Personal Accomplishment (13.3–85.8%) (Elbarazi *et al.*, 2017)**.**

Sleep quality:

Haytham I. AlSaif, in his cross-sectional study that conducted among residents in training in KSA 2018, to identify the prevalence of poor sleep quality and associated risk factors, the result showed a high prevalence of poor sleep quality 86.3% ,the highest prevalence was among anesthesia residents 96% and the lowest prevalence was among pathology residents 68% whereas the prevalence in family medicine residents was 77.4% and . The poor sleep quality was associated mainly with shift work and on-call schedules.(AlSaif, 2019)

METHADOLOGY:

Study area:

Makkah Region Family Medicine program training centers.

Study design:

This study is a cross- sectional analytical study.

Study population:

All Family Medicine residents joined Makkah region family medicine programs during the study period in Saudi Arabia, 2018.

Population selection criteria:

Inclusion criteria:

1- Male and female gender.

2- All ages.

3-All nationalities.

4- All levels of residency

Exclusion criteria:

1- Family Medicine residents who are not present at the time or area of conducting study.

Sample size:

Makkah Region has 325 family medicine residents (males and females) in all the three cities which represent the total population (125 residents in Makkah city ,128 in Jeddah city and 72 in Altaif city). The required sample size was calculated by using a single equation on Roasoft software package, and it was 177 residents (at 95% confidence level and 5% margin of error, 50% response distribution). For convenience number and to overcome the suspected number of the non responder and defaulters, the sample size was increased to (n=195) by adding 10 % to the calculated sample size.

Sampling technique:

According to the sample size previously calculated and in proportion to the percentage of residents in each city to the total population, the researcher used a proportionate stratified sampling technique in distributing the sample size (n=195) between residents in the three cities Thus, Makkah residents represented 38.4 % of sample size (n=75), Jeddah residents represented 39.4% (n=77) and Al Taif residents represents 22.2% of the sample (n=43).

Data collection tool:

A self-administered questionnaire that consists three parts:

The first part:

Socio-demographic variables include city, gender, age, marital status, nationality, number of children, and level of residency.

The second part:

Burnout questionnaire:

The Burnout among family medicine residents was measured by using the Maslach Burnout Inventory (MBI) questionnaire which is a validated and reliable gold standard tool. The questionnaire includes three subscales; each of them has a separate score: 1-Emotional Exhaustion (EE) 2-Depersonalization (DP) 3-Personal Accomplishment (PA). The total questionnaires items are 22. It divided into 3 sections EE(9), DP(5) and PA(8) items.

The items are answered in terms of the frequency, that ranging from (0 "never" to 6 "every day") higher mean scores for Emotional Exhaustion and Depersonalization correspond to a higher degree of experienced burnout. In contrast, lower mean scores on personal accomplishment subscale correspond to a higher degree of experienced burnout. The researcher used the cut-offs cores of $\geq$ 26 for high EE, $\geq$ 9 for high DP and $\leq$ 33 for PA.[13] Burnout was defined as high EE, high DP and low PA.

The Third part:

Sleep quality questionnaire:

The Pittsburgh Sleep Quality Index (PSQI) is a useful tool used to measure the quality of sleep in adults. It is divided into seven components: subjective, sleep latency, sleep quality sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction over the last month. The answers will be based on a 0 to 3 Likert Scale, 3 mean far negative. A total sum of "5" or greater indicates a "poor" sleeper.

Questionnaire validity:

Maslach Burnout Inventory (MBI) is a valid questionnaire, the average reliability obtained with the alpha coefficients without any weighting factor was, for EE (α= .87 and SD = 0.05), Dp (α= .70 and SD = 0.09) and PA (α= .76 and SD = 0.08).(Aguayo *et al.*, 2011)

The best evidence synthesis for the Pittsburgh Sleep Quality Index (PSQI) showed a strong reliability and validity.(Mollayeva *et al.*, 2016) The PSQI has a reliability coefficient (Cronbach's alpha) of 0.83.

Data collection technique:

1-The researcher visited the three family medicine program centers representing Makkah region including Makkah, Jeddah and Al Taif centers after taking the approval from their program directors.

2-The researcher asked for lists of names from the secretary of each family medicine residency training program.

Then the participants were chosen by using simple random sample technique for each list by the help of random number generator(http://www.random.org).

3-The researcher sent an electronic self -administered questionnaire by email to each individual who were involved.

4-The self-administered questionnaire contained a cover letter explaining the purpose of the study, informed consent, and confidentiality items.

Variables:

Dependent variables

- The presence or absence of poor sleep quality
- The presence or absence of burnout

Independent variables:

- The city, gender, age, marital status, nationality, pregnancy, number of children, and level of residency.

Data entry and analysis:

1-The researcher used (SPSS), version 25 for data entry and analysis

2-Categorical variables were presented as frequencies & percentages.

3-Chi-square test was applied to test for the association between two categorical variables. Fischer Exact test was applied instead of chi-square test in case of small frequencies (<5 in at least one the cells).

4-p-value <0.05 was chosen as a cut of level for statistical significance.

Pilot Study:

The pilot study was conducted among an eligible group of family medicine residents in Al Madina Al-Monawara city and accordingly the number needed will be 20 residents, which represent 10% of the sample size.

Ethical consideration:

1-Written permission from the 3 Programs of Family Medicine in Makkah region was taken to start the study after the approval by the local ethics committee is obtained before conducting the study.

2-Electronic consent from each resident to participate in the study was pre-requested for data collection which attached to the main questionnaire.

3- All information's was kept confidential and not accessed except for the purpose of the scientific research.

4-Ethical considerations were taken through all the researcher steps.

Relevance:

- ✓ This research can enhance the previous database that deals with correlation of burnout and sleeps quality.
- ✓ This research may contribute in prevention of burnout and poor sleep quality among Family medicine residents.

Budget:

Self- funded.

RESULTS:

This study included 160 family medicine residents, out of the targeted 177, giving a response rate of 90.4%. Residents from the Makkah family medicine program represent 43.1% of them whereas those from Jeddah and Taif programs represent 35.6% and 21.3% of them, respectively.

Table 1: Socio-demographic characteristics of family medicine residents, Makkah Region, 2018

	Categories	Frequency	Percentage
Gender	Male	56	35.0
	Female	104	65.0
Age in years	25-30	134	83.7
	>30	26	16.3
Nationality	Saudi	159	99.4
	Non-Saudi	1	0.6
Joint program	Makkah	69	43.1
	Jeddah	57	35.6
	Al-Taif	34	21.3
Marital status	Married	95	59.4
	Not-married	65	40.6

Pregnancy (n=104)	Yes	7	6.7
	No	97	93.3
Number of children (n=95)	0	25	26.3
	1-2	60	63.2
	≥3	10	10.5
Residency level	R1	40	25.0
	R2	62	38.8
	R3	31	19.4
	R4	27	16.8

Sleep pattern and sleep disorder:

As demonstrated in table 2, sleep latency ranged between 16 and 30 minutes among almost a third of the residents (37.5%). Overall, More than half of the residents (54.3%) described their sleeping as fairly good, and 8.8% described it as very bad.

Based on PSQI, good sleep was reported among only 32 residents, representing 20% of the participants as shown in figure 1.

Table 2: Sleep pattern and sleep troubles among resident physicians, Makkah Region, 2018

		Frequency	Percentage
Sleep latency (minutes)	≤15	28	17.5
	16-30	60	37.5
	-31-60	39	24.4
	->60	33	20.6
Sleep duration at night (hours)	>7	13	8.1
	6-7	72	45.0
	5-6	49	30.6

	<5	26	16.3
Sleep troubles			
Cannot get to sleep within 30 minutes	Not during past month	40	25.0
	<once/week	45	28.1
	1-2 times/week	36	22.5
	≥3 times/week	39	24.4
Wake up in the middle night or early morning	- Not during past month	66	41.3
	<once/week	39	24.4
	1-2 times/week	27	16.9
	≥3 times/week	28	17.5
Have to get up to use the bathroom	Not during past month	78	48.7
	<once/week	23	14.4
	1-2 times/week	41	25.6
	≥3 times/week	18	11.3
Cannot breath comfortably	Not during past month	129	80.6
	<once/week	20	12.5
	1-2 times/week	9	5.6
	≥3 times/week	2	1.3
Cough or snor loudly	Not during past month	129	80.5
	<once/week	22	13.8
	1-2 times/week	7	4.4
	≥3 times/week	2	1.3
Feel too cold	Not during past month	86	53.8
	<once/week	46	28.7
	1-2 times/week	20	12.5
	≥3 times/week	8	5.0

| Feel too hot	Not during past month	99	61.8
	<once/week	43	26.9
	1-2 times/week	14	8.8
	≥3 times/week	4	2.5
Have bad dreams	Not during past month	77	48.1
	<once/week	64	40.0
	1-2 times/week	17	10.6
	≥3 times/week	2	1.3
Have pain	Not during past month	107	66.8
	<once/week	38	23.8
	1-2 times/week	9	5.6
	≥3 times/week	6	3.8
Having medication to sleep	Not during past month	131	81.8
	<once/week	22	13.8
	1-2 times/week	7	4.4
	≥3 times/week	0	0.0
Trouble staying awake while driving, eating meals, or engaging in social activity	Not during past month	90	56.2
	<once/week	47	29.4
	1-2 times/week	17	10.6
	≥3 times/week	6	3.8
Troubles to keep up enthusiasm to get things done	No problems at all	46	28.7
	Very slight problem	61	38.1
	Somewhat of a problem	43	26.9
	Very big problem	10	6.3
Subjective sleep qualy	Very good	21	13.1
	Fairly good	87	54.3
	Fairly bad	38	23.8

	Very bad	14	8.8
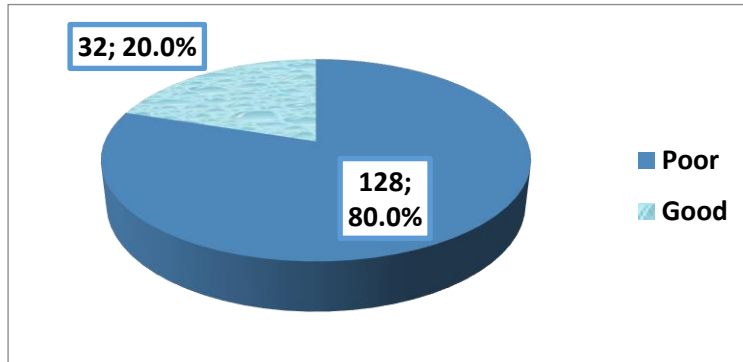
Figure 1: Overall sleeping quality, based on PSQI among Family Medicine residents, Makkah region

Burnout:

Overall burnout

Figure 3 shows that the overall prevalence of burnout (High EE, High DP, and low PA) was 6.3%. The highest prevalence was among residents in Makkah 10.1% followed by residents in Taif 5.9% then Jeddah 1.8 %, Only five resident physicians (3.1%) had no burnout in any of the three dimensions.
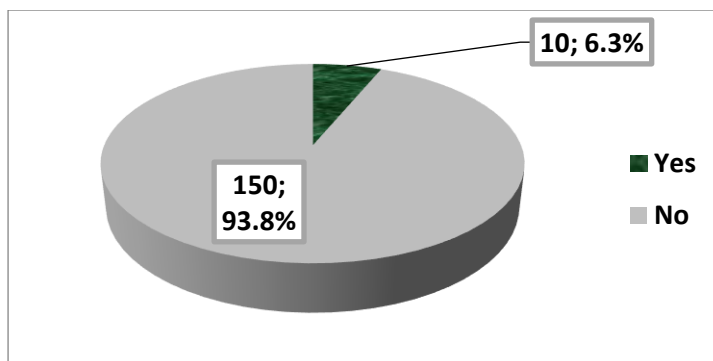

Figure 3: Overall prevalence of burnout among family medicine residents, Makkah Region

Association between sleep quality and burnout:

The majority of the residents with high emotional exhaustion (92.9%) had poor sleep quality compared to 77.3% of those with low emotional exhaustion. The difference was statistically significant, p=0.045. High depersonalization and low personal accomplishment, as well as overall burnout, were not significantly associated with sleep quality, as shown in table 8.

Table 3: Association between sleep quality and burnout among family medicine residents, Makkah Region

	Sleep quality		p-value
	Poor **N=128** **N (%)**	**Good** **N=32** **N (%)**	
Emotional exhaustion			
Low (n=132)	102 (77.3)	30 (22.7)	
High (n=28)	26 (92.9)	2 (7.1)	0.045**
Depersonalization			
Low (n=119)	97 (81.5)	22 (18.5)	
High (n=41)	31 (75.6)	10 (24.4)	0.415*
Personal accomplishment			
High (n=10)	9 (90.0)	1 (10.0)	
Low (n=150)	119 (79.3)	31 (20.7)	0.368**
Overall burnout			
No (n=150)	119 (79.3)	31 (20.7)	
Yes (n=10)	9 (90.0)	1 (10.0)	0.368**

* Chi-square test   **Fischer Exact test

DISCUSSION:

Residents work in an environment with multiple stressors, which increases the risk of burnout among them, which in turn negatively impacts their career (Al-Mendalawi, 2016), (Rodrigues *et al.*, 2018). Sleep-disturbance is also a common problem among resident physicians and can lead to disastrous outcomes for them and their patients (Murthy and Nayak, 2014). Many resident physicians experience burnout and sleep deprivation, which could affect their learning and clinical performance (Min, Sbarra and Keim, 2015). Thus, this study was carried out to assess the magnitude of both problems (burnout and poor sleep quality) among family medicine resident physicians in Makkah region as well as to investigate the association between both problems.

In the present study, the overall prevalence of burnout among family medicine residents was 6.3% whereas those of high EE, high DP, and low PA were 17.5%, 25.6%, and 93.8%, respectively. Relatively, limited studies have been conducted on resident physicians, and usually, these studies included all residents in different specialties, unlike the present study, which took only family medicine residents in focus. Therefore, comparisons should be taken with caution.

Some studies were carried out on family medicine and primary care physicians (future of the family medicine residents). In Makkah city (2012), High EE, High DP and decreased PA were reported among 38.2%, 25.2% and 23.7% of primary care physicians, respectively, The modified burnout (high EE and high DP) was (21.4%) while the overall prevalence of burnout was (9.9%) (Khan, 2012) which is slightly higher incomparable with the current study , This variation could be due to a wider population including family medicine residents and primary care physicians. In Riyadh, the prevalence of high EE was 53.5% whereas those of high DP and low PA were 38.9% and 28.5 respectively, and the overall score of burnout was only 2.78% in all three dimensions which is less low prevalence than the current study, and this might be explained by choosing different study area as the study was conducted in hospital with more facilities available than the PHCC (Selaihem, 2013) .

In Asir province, 29.5% of primary healthcare physicians had high emotional exhaustion, 15.7% had high depersonalization, and 19.7% had low personal accomplishment. In agreement with the present study, 6.3% scored high burnout in all of the three dimensions (Al-Sareai *et al.*, 2013). In Kuwait, the prevalence of burnout was 36.8% in general practitioners compared with only 5.7% in family physicians (Al-Shoraian *et al.*, 2011) which is again near to the current study due to the use of similar population and similar environment.

In a recent systematic review included studies from different Arab countries assessing burnout amongst healthcare professionals, high Emotional Exhaustion ranged between 20 and 81%, high Depersonalization ranged between 9.2 and 80%) and low Personal Accomplishment ranged between 13.3 and 85.8% (Elbarazi *et al.*, 2017). By comparing with the current study, this systematic review showed different figures than the current study with higher upper limits of the percentage of the three dimensions of burnout and this can be explained by using bigger sample size which was taken from different Arab countries. On the other hand, the slightly higher low PA in the current study as comparing with the Arab 's review could be attributed to the frequent rotations in different departments, lack of participation in decision-making as well as the lack of direction in their career (Luyckx *et al.*, 2010).

In the present study, low depersonalization was more reported among family medicine residents of Taif program than those of Makkah and Jeddah programs. Further investigation is recommended to clarify this finding.

The present study revealed that poor sleep was reported among most of the family medicine residents (80%) as expected, which is in agreement with most of the studies in the literature review. For example, in a study carried in KSA 77.4 % of the family residents reported poor sleep quality, and regarding a study conducted in Tabuk (KSA), 78.3% of the family and emergency physicians were reported as poor sleep quality (Majeed, 2014). Similarly, in Najran province, Saudi Arabia, poor sleep quality in the last 12 months was reported among 84.6% of healthcare workers (Sagar *et al.*, 2017).

The high prevalence of poor sleep among resident physicians in the present and other studies could be explained by facing difficulties after hard working hours lead to stress (Söderström *et al.*, no date). In addition, it has been observed that those with sleep disorders tend to think excessively about their sleep (Brosschot, Gerin and Thayer, 2006), which creates a hyperactive state, which may involve increased activation of the hypothalamic-pituitary-adrenal axis (McEwen, 2006).

Several kinds of researches (Melamed *et al.*, 2006)ˌ(Grossi *et al.*, 2005)ˌ(De Vente *et al.*, 2003) hypothesized that the association between burnout and sleep disorders among young physicians might be mediated by a disturbance of the hypothalamic-pituitary-adrenal axis, which is considered the central stress–the physiological system for long-term adaptation to stress. However, in the present study, we find an association between sleep quality and burnout with only one component among family medicine residents.

The current research has its limitations, including mainly the cross-sectional design of the study, which lacks evaluation of the temporality and causality of the relationships. Another limitation is the self-reported nature of the data collection, which may be subjected to bias.

CONCLUSION:

Poor sleep quality affects most of the family medicine resident physicians in the Makkah region. The study showed that burnout is an important problem among family medicine residents in the Makkah region, with the exception of low personal accomplishment, which was very highly prevalent among them. Residents from Taif region reported the highest rate of high depersonalization dimension of burnout. There was no link between poor sleep quality and burnout with its dimensions.

RECOMMENDATIONS:

Based on the study findings, the following are recommended

1. Collective preventive measures are essential to ensure the adequate mental health of family medicine residents, particularly measure to improve sleep quality and low personal accomplishment.

2. Regular screening for sleep disorders and burnout among family medicine residents and encourage residents to consult specialists as needed

3. Educate the family medicine residents to follow personal and work strategies to prevent burnout.

4. Continuous medical education for family medicine residents regarding the importance of good sleep hygiene and available resource for help.

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