

In the name of GOD

Assessment of the correlation between sleep quality and gastroesophageal reflux among medical students

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Introduction:

Due to stressful occupational conditions, irregular dietary and sleep schedules, medical students are at high risk for the development of gastrointestinal disorders, gastroesophageal reflux (GERD) in particular, as well as sleep disturbances. Therefore, for the first time, the current study is aimed to assess the correlation between GERD and sleep disturbances among medical students.

Methods:

The current cross-sectional study has been conducted on 290 medical students at different stages of medical science in Iran in 2018-19. The information, including age, gender, stage of studying, residence, and body mass index (BMI), were gathered. The frequency scale for the symptoms of gastroesophageal reflux (FSSG) was utilized to assess gastrointestinal symptoms among them and the Pittsburgh Sleep Quality Index (PSQI) to assess sleep quality. Eventually, the association of sleep disturbances with demographic factors and gastrointestinal symptoms was evaluated.

Results

- *In the current study, 290 university students, including 116 (40%) males and 174 (60%) females, fulfilled the study protocol.*
- *Based on Table 1, the intensity of sleep quality impairment was only affected by the students' BMI (P -value <0.001), but other demographic factors, including gender (P -value=0.146), residence (P -value=0.68) or grade of study (P -value=0.176).*

Table 1. The association of sleep quality impairment with demographic factors

Variables		Sleep quality impairment, n (%)				P-value
		No	Moderately impaired	Severely impaired	Very severely impaired	
Gender	Male	35 (30.43)	41 (35.65%)	34 (29.57%)	5 (4.35%)	0.146
	Female	48 (27.75)	73 (42.20)	36 (20.81)	16 (9.25)	
Residence	Private house	36 (35.29)	30 (29.41)	28 (27.45)	8 (7.84)	0.068
	Dormitory	47 (25.27)	84 (45.16)	42 (22.58)	13 (6.99)	
Body mass index	Normal	67 (35.64)	87 (46.28)	30 (15.96)	4 (2.13)	<0.001
	Overweight	14 (17.07)	24 (29.27)	31 (37.80)	13 (15.85)	
	Obese	2 (11.11)	3 (16.67)	9 (50)	4 (22.22)	
Grade	Basic sciences course	23 (31.94)	29 (40.28)	12 (18.06)	7 (9.72)	0.176
	Physiopathology course	23 (31.94)	27 (37.50)	17 (23.61)	5 (6.94)	
	Stagership	21 (28.38)	29 (39.19)	24 (32.43)	0 (0)	
	Internship	16 (23.19)	29 (42.03)	16 (23.19)	8 (11.59)	

The further assessments based on univariate logistic regression model revealed significant independent role of overweight (P-value<0.001; 95%CI: 1.58-6.06) and dormitory residence (P-value=0.048; 95%CI: 1.01-2.99) but the other demographic factors (P-value>0.05).

Table 2. Univariate logistic regression assessment of factors associated with sleep quality in medical students

Impaired sleep quality	Odds ratio	95% Confidence interval	P-value
Gender			
Male	1		0.313
Female	1.32	0.77-2.30	
Residence			
Private house	1		0.048
Dormitory	1.73	1.01-2.99	
Body mass index			
Normal	1		
Overweight	3.09	1.58-6.06	<0.001
Obese	3.65	0.79-16.88	0.097
Grade			
Basic sciences course	1		
Physiopathology course	1.05	0.51-2.19	0.889
Stagership	1.38	0.65-2.90	0.399
Internship	1.90	0.85-4.26	0.119

The latter evaluation of the current study revealed a significant association between sleep quality impairment and GERD (P-value<0.05) that is represented in Table 3 in detail.

Table 3. The association of sleep quality impairment with gastroesophageal reflux disease

Variables	Sleep quality impairment, n (%)				P-value
	No	Moderately impaired	Severely impaired	Very severely impaired	
Heartburn	4 (3.67)	37 (33.94)	50 (45.87)	18 (16.51)	<0.001
Regurgitation	5 (6.10)	24 (29.27)	38 (46.34)	15 (18.29)	<0.001

Discussion

- *In accordance with the other studies conducted on the general population, the poor sleep quality was directly associated with the presence of symptomatic GERD in medical students, as well, regardless of the symptom type, either heartburn or regurgitation*
- *Surfing the literature has revealed similar outcomes regarding sleep disturbances among the medical students,*
- *The correlation of demographic characteristics with sleep quality among medical students is a point of controversy*
- *The grade of study role on sleep quality is another favored issue assessed by numerous authors.*
- *One of the novel results of our report is the contribution of poor sleep quality to the residence in a dormitory.*

Conclusion

Based on the findings of the current report, GERD is associated with poor sleep quality among medical students. In addition, residence in dormitory and overweight, but gender and grade of studying, are the two independent predictors of poor sleep quality among the medical students.

Thanks for your attention