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The Sleepy Medical Student: Exploring Sociodemographic Factors and Excessive Daytime Sleepiness in Iraq

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Abstract

Excessive Daytime Sleepiness is a common problem among medical students, which can lead to poor academic performance, decreased quality of life, and increased risk of accidents. Understanding the factors associated with this sleepiness can help in developing effective interventions to improve the sleep quality and overall well-being of medical students. This study aims to assess the prevalence of excessive daytime sleepiness (EDS) among Iraqi medical students. A cross-sectional study was carried out in October 2022 by filling a Google form. The study includes 241 medical students, using basic random sampling. Of those, 15.4% were medicine students, 31.5% were dentistry students and 53.1% were pharmacy students. Female students comprised 71.4% of the total student population. The EPWORTH sleepiness scale was 12.71(±4.30) And the prevalence of excessive daytime sleepiness was 53.53% among study students. Only gender showed a significant association with EDS prevalence where severe EDS was significantly higher in females. It is important for medical schools to address the issue of excessive daytime sleepiness and provide support to their students to improve their academic performance and overall quality of life.

Keywords: EPWORTH sleepiness scale, Excessive daytime sleepiness, Medical students, Sleep medicine, Sociodemographic factors

Introduction

Sleeping problems have become very prevalent in general population, affecting individuals of all ages and backgrounds. [(1)]. Sleep problems among medical students have been extensively studied, and they are known to be more prevalent compared to the general population. The demanding nature of medical education, long working hours, and high levels of stress contribute to sleep disturbances among medical students and making them particularly susceptible to sleep problems [(2, 3)]. Compared to non-medical students, medical students have a higher rate of sleep disruptions[(4)].

According to epidemiological research, sleep disorders raise the risk of cardiovascular disease, road traffic accidents, and other conditions [(5)] with worse academic results[(6)]. Several variables, including long study and lecture hours, late clinical rotations, mental stress, lifestyle choices, and heavy use of virtual social media, contribute to the high prevalence of sleep problems among medical students [(7-9)].

There is evidence to support the importance of adequate, restorative sleep for long-term memory, neurocognitive function, and psychomotor function and physical and mental health. Also, sleep-deprived medical students may be more vulnerable to worry and sadness illnesses [(2, 10, 11)]. According to a review by Alfonsi et al., sleep duration and quality are highly correlated with student learning and academic achievement [(12)]. Complaints about sleep problems and their effects on daytime functioning include insufficient sleep duration, poor sleep quality, excessive daytime sleepiness, and trouble starting and/or maintaining sleep[(13, 14)]. This study's goal is to investigate the relationship between sociodemographic factors and excessive daytime sleepiness among medical students in Iraq.Also, the study aims to explore how various sociodemographic factors, such as age, gender, socioeconomic status, and educational background, might contribute to excessive daytime sleepiness among medical students.

Materials and Methods

Study Design

A cross-sectional study was carried out from October 2022 till December 2022 with two months duration for only filling a Google form. The google form was devoid of the (name of student) part so that there will be no bias in our data, the link was delivered to students through their electronic groups after the agreement of their doctors and representatives. The form contained a group of questions that were answered by the students freely.

While any response having questions not answered completely was neglected. Colleges of medicine in Iraq, provides a 6-year bachelor's degree in medicine and surgery (MBBS) where the curriculum is split into 3 preclinical years and then additional 3 clinical levels while colleges of dentistry and pharmacy offers 5-year-long bachelor's degrees in pharmacy and dentistry. Iraq, on the other hand, is a Muslim-majority Arab nation with a population of about 40 million. The nation is in an unstable state, which has disrupted every element of life, including the administrative and instructional processes at the institutions.

Study Population and Sample

The study targeted 250 medical students, students were selected randomly from different educational level, and out of 250 instances, 9 were excluded due to incomplete item replies. The criteria of inclusion are any medical student could participate after properly answering all questions in the form, while the criterion of was incomplete response by a medical student The EPWORTH sleepiness scale total score is invalid if one or more of the eight total scores are absent since missing item scores cannot be interpolated [(15)].

Study Questionnaire

In order to assess daytime sleepiness, we used the Epworth Sleepiness Scale (ESS)[(16)]It consists of 8 self-rated items, each scored from (0 to 3), that measure a subject's "likelihood of dozing or falling asleep" in common situations of daily life. The final score is the sum of individual items (scores 0–24).Values>10 &<15 are considered excessive daytime sleepiness and values >15 are considered severe sleepiness[(17)] A questionnaire had two parts, which participants responded to. The first part asks about such as age, height, weight, gender, marital status and whether having children or not. The modified and translated versions of the score items are included in the second section of the questionnaire. Arabic translations of the original scale were made available for current study using a forward-backward method that was modified by Brislin et al. [(18, 19)]

Data Analysis

This study involved 241 college students as participants. The statistical analysis of the data was conducted using IBM SPSS version 26. To present the participant characteristics, various measures such as mean, standard deviation (SD), percentages, tables, and diagrams were utilized. The association between the prevalence of Excessive Daytime Sleepiness (EDS) and different study parameters was assessed using the Chi-square test, with a significance level set at P-value = 0.05. Additionally, the One-Way ANOVA test was employed to compare means, with the same significance level of P-value = 0.05.

Ethical Consideration

Agreement of each participant was obtained through the Google form after explaining the goals of study to the participant in the form and made an option "If would you like to proceed; that means you agree to be involved in our study". The questionnaire does not include any personal information. When gathering the completed questionnaires, anonymity and confidentiality were preserved.

Results and Discussion

Gender: male students were 69(28.6%) and female students 172(71.4%) as shown in Figure 1.

Colleges: medicine students were 37 (15.4%), dentistry students were 76(31.5%) and pharmacy students were 128 (53.1%) as shown in Figure 2. As regarding the marital status: married students were 4 (1.7%) and unmarried students were 237(98.3%) as shown in Figure 3. While students having children were 2 (0.8%). Students mean(±SD) age was 20.73 (±2.16) years. Students mean (±SD) weight was 65.93 (±16.05) kg. Students mean (±SD) height was 165.14 (±9.00) cm. Students mean(±SD) BMI was 24.10 (±5.04) Kg/m². Students mean (±SD) EPWORTH sleepiness scale was 12.71 (±4.30) As shown in Table 1.

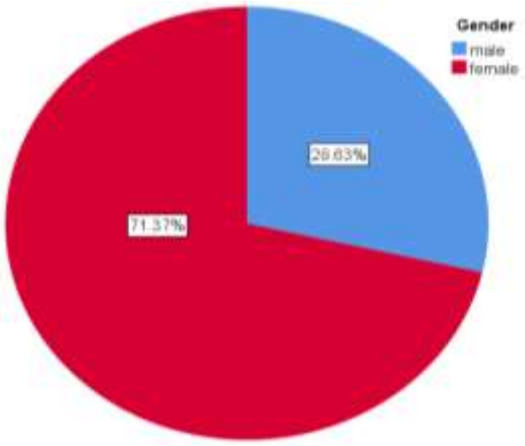

Figure 1. Distribution of study sample according to gender.

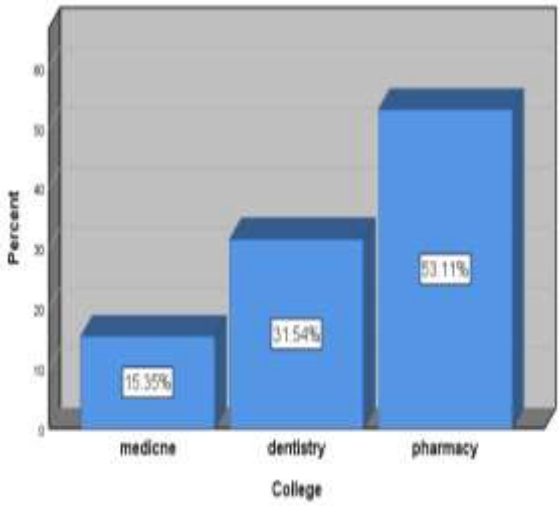

Figure 2. Distribution of study sample according to college

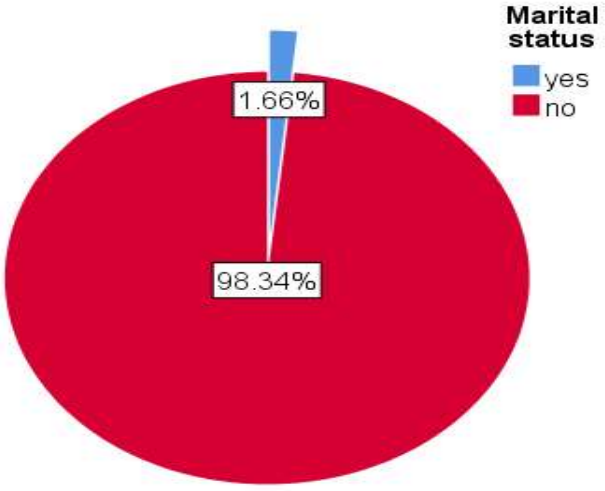

Figure 3. Distribution of study sample according to marital status.

Prevalence of EDS was 53.53% among study students while high level (severe) EDS prevalence was 18.26% as shown in figure 4.Distribution of EDS prevalence among study students according to their sociodemographic factors (Described in Table 2). Among all previously mention sociodemographic factors only gender showed a significant association with EDS prevalence where high (severe) EDS was significantly higher in females with P value = 0.037.

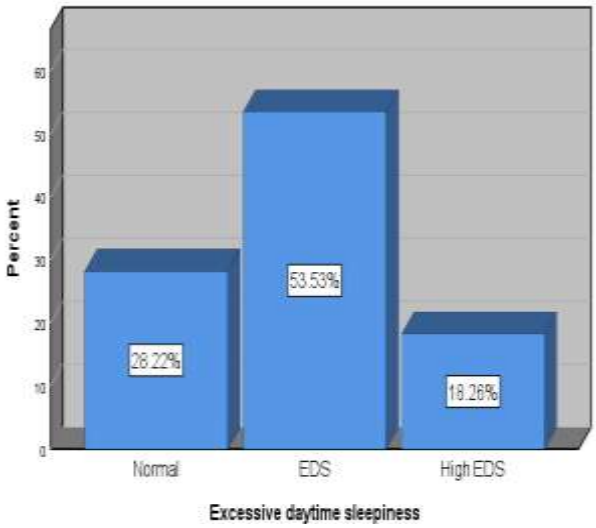

Figure 4 .Prevalence of EDS among study group students

Table 1 Description of study group sociodemographic characteristics and sleepiness scale.

N = 241		**Freq**	**%**
Gender	Male	69	28.6
	Female	172	71.4
College	medicine	37	15.4
	Dentistry	76	31.5
	pharmacy	128	53.1
Marital status	Married	4	1.7
	Not	237	98.3
have children	Yes	2	0.8
	No	239	99.2
N = 241		Mean ±SD	Minimum– Maximum
Age		20.73 ±2.16	١٨.00 - 32.00
Weight		65.93 ±16.05	41.00 - 173.00
Height		165.14 ±9.00	147.00 - 188.00
BMI		24.10 ±5.04	13.24 - 55.85
EPWORTH sleepiness scale		12.71 ±4.30	0.00 - 24.00

Table 2 .Distribution of EDS prevalence among study students according to theirm sociodemographic factors

N = 241		**Excessive daytime sleepiness**			
		Normal	**EDS**	**High (severe) EDS**	
		Frequency	**Frequency**	**Frequency**	**P value**
Gender	Male	26	36	7	0.037*
	Female	42	93	37	
College	Medicine	10	19	8	0.883
	Dentistry	22	43	11	
	Pharmacy	36	67	25	
Marital status	Married	1	1	2	0.237
	Not	67	128	42	
Have children	Yes	1	0	1	0.282
	No	67	129	43	

N = 241	Excessive daytime sleepiness			
	Normal	**EDS**	**High EDS**	P value
	Mean ±SD	Mean ±SD	Mean ±SD	
Age	20.81 ±2.23	20.59 ±2.25	21.05 ±1.75	0.456
BMI	26.34 ±13.43	23.77 ±4.62	23.94 ±4.27	0.094
*P value < 0.05 is significant				

According to a study by Shen et al. , the prevalence of EDS among medical students was found to be 36.7% [20]. Another study in Saudi Arabia [7] reported a prevalence rate of 31.5%. These findings suggest that EDS is a prevalent problem among medical students.The causes of EDS in medical students are multifactorial. Factors such as academic workload, stress, irregular sleep patterns, and poor sleep hygiene have been identified as contributing factors to EDS. However, the relationship between sociodemographic factors and EDS is not clear. The gender (female in our study P value 0.037) has also been shown to be a significant factor in EDS among medical students, as another study in 2016 reported that female medical students were more likely to experience EDS than male students[21]. The reasons for this gender difference are not clear, but it may be related to differences in sleep quality or hormonal factors.EDS can have a significant impact on a medical student's academic performance. Many previous studies found that medical students with EDS had lower grades and were more likely to fail exams than those without EDS[22-24]. EDS can also affect a student's social life and mental health, leading to feelings of isolation and depression.It is important for medical schools to address the issue of EDS among their students. Strategies such as education on sleep hygiene, stress management, and workload reduction may help to alleviate the problem of EDS in medical students.

Conclusion

Excessive daytime sleepiness is a prevalent problem among medical students. It is important for medical schools to address the issue of EDS and provide support to their students to improve their academic performance and overall quality of life. Further research is needed to better understand the relationship between sociodemographic factors and EDS in medical students. This will help to develop targeted interventions to address the problem of EDS in this population.

Data Availability

Data set generated and analyzed for the current study are available from the corresponding author on reasonable request.

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This work is self-funded by the researcher.

Ethics Statements

The Author declares that this study was through Google form which contained no personal information so there was no need for ethical approval from an ethics committee.

Conflicts of Interest

The authors have declared there is no conflicts of interest.

Author Contribution

Aseel, the author, participated in all parts of the research including study conception and design, data collection, analysis and interpretation of results, draft manuscript preparation and approval of the final version of the manuscript.

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طلاب كليات العلوم الطبية المصابون بالنعاس :تقصي العوامل الاجتماعية الديموغرافية والنعاس النهاري المفرط في العراق

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الخلاصة

يُعد النعاس المفرط أثناء النهار مشكلة شائعة بين طلاب المجموعة الطبية، مما قد يؤدي إلى ضعف الأداء الأكاديمي وانخفاض جودة الحياة وزيادة خطر الحوادث. إن فهم العوامل المرتبطة بهذا النعاس يمكن أن يساعد في تطوير تدخلات فعالة لتحسين جودة النوم والرفاهية العامة لطلاب الطب. تهدف هذه الدراسة إلى تقييم انتشار النعاس المفرط أثناء النهار بين طلاب المجموعة الطبية العراقيين. أجريت دراسة مقطعية في أكتوبر ٢٠٢٢ عن طريق ملء نموذج Google. شملت الدراسة ٢٤١ طالب مجموعة الطبية ، باستخدام عينة عشوائية أساسية. ومن بين هؤلاء، كان ١٥,٤٪ من طلاب الطب، و ٣١,٥٪ من طلاب طب الأسنان و ٥٣,١٪ من طلاب الصيدلة. شكلت الطالبات ٧١,٤٪ من إجمالي عدد الطلاب. كان مقياس النعاس EPWORTH 12.71 (± ٤,٣٠) وكان انتشار النعاس المفرط أثناء النهار ٥٣,٥٣٪ بين طلاب الدراسة. أظهر الجنس فقط ارتباطًا مهمًا بانتشار النعاس المفرط أثناء النهار حيث كان النعاس المفرط الشديد أثناء النهار أعلى بشكل ملحوظ لدى الإناث. من المهم أن تعالج كليات المجموعة الطبية قضية النعاس المفرط أثناء النهار وتقدم الدعم لطلابها لتحسين أدائهم الأكاديمي وجودة حياتهم بشكل عام..

الكلمات المفتاحية: العوامل الاجتماعية والديموغرافية,طب النوم,طلاب العلوم الطبية, نعاس مفرط أثناء النهار ,مقياس النعاس EPWORTH