Original Article

Prevalence of Unhealthy Lifestyle Among Health Science Students in Ajman, UAE: A Cross-Sectional Study

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Abstract

Objectives: This study aimed to assess the prevalence of unhealthy lifestyle behaviors (sleep, diet, physical activity, and smoking) among health science students in Ajman, UAE, and explore associations with sociodemographic factors (age, gender, nationality). ***Methods:*** This is a descriptive cross-sectional quantitative study involving health science students aged 18-25. Data collection started after obtaining permission to conduct the study, an IRB, and official approval from the sites. The goal was to deliver questionnaires to suitable participants who agreed to participate and signed the consent form. The information obtained from those questionnaires was organized and arranged in SPSS and Excel. ***Results:*** In our study, in terms of sleep habits, it was found that 65.9% were unhealthy; Dietary habits, it was found that 74.55% were unhealthy; Physical exercise, it was found that 70.7% were unhealthy; Smoking, it was found that 23.8% were unhealthy. ***Conclusions:*** The prevalence of unhealthy lifestyles in our study is notably higher compared to other studies. Significant findings include associations between diet quality and both age and program type, fruit and vegetable intake and program type, milk intake and nationality, physical exercise status and duration with gender, and smoking status with both gender and nationality.

Keywords: *Lifestyle, Health, Insomnia, Balanced Diet, Obesity.*

Introduction

Health promotion emphasizes behavioural change rather than just illness avoidance. It focuses on individuals and populations as a whole, not just those at risk for specific diseases. Lifestyle integrates various factors like work, play, eating, sleeping, and communication. A healthy lifestyle includes habits such as a balanced diet, regular exercise, adequate sleep, and not smoking. Empowering individuals to make positive health decisions is crucial. Understanding university students' lifestyles is vital due to limited data on this group's health behaviors, which can impact their future health. Developing healthy habits during college can strengthen long-term health. Health-risk behaviors established in youth often persist into adulthood and can be preventable. College students lead busy, often stressful lives, balancing work, socializing, and studying, making a healthy lifestyle essential for overall well-being. Some studies link unhealthy behaviors to academic performance issues. This research examines sleep, diet, physical activity, and smoking's roles in maintaining health [1].

Materials and Methods

This study, which was conducted at Medical University, Ajman, over ten months, follows a descriptive cross-sectional quantitative design. It will include individuals who are willing to participate, have given informed consent, are between 18 and 25 years old, and belong to any gender and nationality. Participants will be excluded if they are younger than 18, refuse to participate, provide informed consent, or are unavailable at the time of data collection.

The study's main objective is to find the effects of inadequate sleep, dietary intake, physical exercise, and smoking on one's lifestyle. The secondary objective is to find an association between unhealthy lifestyles & different sociodemographic factors (age, gender, nationality)

Once approved by the Institutional Review Board (IRB), the study will use a self-administered questionnaire to gather data on socio-demographic factors, physical health, and psychological well-being. The objectives of the study will be explained to all participants, and their right to refuse participation will be emphasized. After obtaining the necessary permissions, data collection will begin, and questionnaires will be distributed to eligible participants who voluntarily agree to take part in the study. The collected data will then be systematically organized and processed using appropriate software for further analysis.

The research is considered feasible as it involves simple questions, requires no financial incentives, and has minimal logistical challenges, with no need for follow-up. According to university regulations, all study data will be securely stored in the Community Medicine Department for three years.

Results

Table 1: Sociodemographic Characteristics of participants

Variable	Subcategories	Frequency	Percentage
Age	18-20 years	315	75.0%
	21-24 years	96	22.9%
	25+ years	9	2.1%
Gender	Male	165	39.3%
	Female	255	60.7%
Nationality	Middle East	143	34%
	South east Asia	115	27.4%
	American/European	61	14.5%
	African	36	8.6%
	West Pacific	50	11.9%
Programme	MBBS	148	35.2%
	ADPCS	35	8.3%
	BBMS	35	8.3%
	BDS	50	11.9%
	BPT	13	3.1%
	PharmD	71	16.9%
	Nursing	27	6.4%
	Others	41	9.8%
Year of Study	Year 1	100	23.8%
	Year 2	105	25.0%
	Year 3	167	39.8%
	Year 4	38	9.0%
	Year 5	10	2.4%

The above tables provide a detailed analysis of the sociodemographic characteristics of participants and their association with various lifestyle factors. Table 1 presents the distribution of participants based on age, gender, nationality, academic program, and year of study. The majority of students fall within the 18-20 age group (75%), with a higher proportion of females (60.7%) compared to males (39.3%). In terms of nationality, most students are from the Middle East (34%) and Southeast Asia (27.4%), while smaller proportions belong to American/European, African, and West Pacific regions. Among the academic programs, MBBS has the highest representation (35.2%), followed by PharmD (16.9%), whereas BPT has the lowest representation (3.1%). Regarding the year of study, most students are in their third year (39.8%), and only a small fraction (2.4%) are in their final year.

Table 2: Association between Sleep duration & Sociodemographic factors

Variable	Subcategories	Healthy		Unhealthy		P
		Number	%	Number	%	
Age	18-20 years	111	35.2	204	64.8	.129
	21-24 years	38	39.6	58	60.4	
	25+ years	6	66.7	3	33.3	
Gender	Male	54	32.7	111	67.3	.154
	Female	101	39.6	154	60.4	
Nationality	Middle East	50	35.0	93	65.0	.255
	South east Asia	38	33.0	77	67.0	
	American/European	19	31.1	42	68.9	
	African	16	44.4	20	55.6	
	West Pacific	24	48.0	26	52.0	
Programme	MBBS	51	34.5	97	65.5	.151
	ADPCS	18	51.4	17	48.6	
	BBMS	8	22.9	27	77.1	
	BDS	15	30.0	35	70	
	BPT	7	53.8	6	46.2	
	PharmD	27	38	44	62	
	Nursing	13	48.1	14	51.9	
	Others	16	39.9	25	61.0	
Year of study	Year 1	35	35.0	65	65.0	.648
	Year 2	44	41.9	61	58.1	

Year 3	57	34.1	110	65.9	
Year 4	16	42.1	22	57.9	
Year 5	3	30.0	7	70.0	

Above table explores the association between sleep duration and sociodemographic variables, categorizing participants into those with healthy and unhealthy sleep duration. The findings indicate that unhealthy sleep duration is more common among younger students, particularly in the 18-20 age group (64.8%). Gender-wise, females (60.4%) have a slightly higher prevalence of unhealthy sleep than males (67.3%). When analyzed by academic program, BBMS students show the highest prevalence of unhealthy sleep (77.1%). However, the statistical analysis did not reveal any significant associations between sleep duration and sociodemographic variables (p > 0.05).

Table 3: Association between Diet quality & Sociodemographic factors

Variable	Subcategories	Healthy		Unhealthy		P
		Number	%	Number	%	
Age	18-20 years	31	9.8	284	90.2	.018
	21-24 years	5	5.3	89	94.7	
	25+ years	3	33.3	6	66.7	
Gender	Male	14	8.5	151	91.5	.631
	Female	25	9.9	228	90.1	
Nationality	Middle East	8	5.6	134	94.4	.078
	South east Asia	10	8.7	105	91.3	
	American/European	11	18.0	50	82.0	
	African	5	13.9	31	86.1	
	West Pacific	5	10.2	44	89.8	
Programme	MBBS	17	11.5	131	88.5	.028
	ADPCS	0	0.0	34	100.0	
	BBMS	2	5.7	33	94.3	
	BDS	3	6.0	47	94.0	
	BPT	2	15.4	11	84.6	
	PharmD	5	7.0	66	93.0	
	Nursing	1	3.7	26	96.3	
	Others	9	22.5	31	77.5	
Year of study	Year 1	8	8.0	92	92.0	.465
	Year 2	7	6.7	97	93.3	
	Year 3	20	12.0	146	88.0	
	Year 4	4	10.5	34	89.5	
	Year 5	0	0.0	10	100.0	

Above table describes the relationship between diet quality and sociodemographic factors, revealing a high prevalence of unhealthy dietary habits among participants. Among younger students aged 18-20 years, 90.2% had an unhealthy diet, indicating poor nutritional choices. Gender differences were minimal, with 91.5% of males and 90.1% of females having unhealthy diets. When analyzed by nationality, the Middle Eastern group exhibited the highest percentage of unhealthy diets (94.4%). Across different academic programs, ADPCS students had a 100% prevalence of unhealthy diets, while other programs also showed alarmingly high rates. Statistically significant associations were found between diet quality and age (p = 0.018) as well as program type (p = 0.028), suggesting that younger students and those enrolled in specific programs may be more prone to unhealthy dietary habits.

Table 4: Association between Physical Exercise status & Sociodemographic factors

Variable	Subcategories	Healthy		Unhealthy		P
		Number	%	Number	%	
Age	18-20 years	256	81.5	58	18.5	.532
	21-24 years	78	81.3	18	18.8	
	25+ years	6	66.7	3	33.3	
Gender	Male	146	89.0	18	11.0	<.001
	Female	194	76.1	61	23.9	
Nationality	Middle East	119	83.2	24	16.8	.526
	South east Asia	93	80.9	22	19.1	
	American/European	50	82.0	11	18.0	
	African	29	82.9	6	17.1	
	West Pacific	36	72.0	14	28.0	
Programme	MBBS	124	84.4	23	15.6	.120
	ADPCS	30	85.7	5	14.3	
	BBMS	31	88.6	4	11.4	

	BDS	40	80.0	10	20.0	
	BPT	12	92.3	1	7.7	
	PharmD	52	73.2	19	26.8	
	Nursing	23	85.2	4	14.8	
	Others	28	68.3	13	31.7	
Year of study	Year 1	87	87.0	13	13.0	.146
	Year 2	80	76.9	24	23.1	
	Year 3	131	78.4	36	21.6	
	Year 4	32	84.2	6	15.8	
	Year 5	10	100.0	0	0.0	

Table 4 explores the association between physical exercise status and sociodemographic factors, highlighting differences in exercise habits among students. The overall findings indicate that physical inactivity is prevalent among 70.7% of participants, with a notable gender disparity. Males (89.0%) were significantly more likely to engage in regular physical exercise compared to females (76.1%), with this difference being statistically significant ($p < 0.001$). When analyzing nationality, variations in physical activity levels were observed, with the highest proportion of physically active students found among the African group (82.9%) and the lowest among the West Pacific group (72.0%). Differences were also observed across academic programs, with BPT students exhibiting the highest level of physical activity (92.3%), whereas students in the PharmD program had the lowest participation in physical exercise (73.2%). In terms of the year of study, final-year students (Year 5) had the highest rate of physical activity (100%), while Year 3 students showed the lowest (78.4%). However, aside from gender, no statistically significant associations were found between physical activity and other sociodemographic variables ($p > 0.05$).

Table 5: Association between Smoking status & Sociodemographic factors

Variable	Subcategories	Healthy		Unhealthy		P
		Number	%	Number	%	
Age	18-20 years	245	77.8	70	22.2	.182
	21-24 years	67	69.8	29	30.2	
	25+ years	8	88.9	1	11.1	
Gender	Male	115	69.7	50	30.3	.012
	Female	205	80.4	50	19.6	
Nationality	Middle East	112	78.3	31	21.7	.031
	South east Asia	82	71.3	33	28.7	
	American/European	40	65.6	21	34.4	
	African	33	91.7	3	8.3	
	West Pacific	40	80.0	10	20.0	
Programme	MBBS	109	73.6	39	26.4	.108
	ADPCS	29	82.9	6	17.1	
	BBMS	25	71.4	10	28.6	
	BDS	34	68.0	16	32.0	
	BPT	11	84.6	2	15.4	
	PharmD	63	88.7	8	11.3	
	Nursing	21	77.8	6	22.2	
	Others	28	68.3	13	31.7	
Year of study	Year 1	86	86.0	14	14.0	.135
	Year 2	77	73.3	28	26.7	
	Year 3	122	73.1	45	26.9	
	Year 4	28	73.3	10	26.3	
	Year 5	7	70.0	3	30.0	

Table 5 examines the association between smoking status and sociodemographic characteristics, revealing that 23.8% of participants engaged in smoking, while the majority (76.2%) were non-smokers. The prevalence of smoking varied by age, with the highest rates observed among students aged 21-24 years (30.2%), compared to 22.2% among those aged 18-20 years. Gender differences were also significant ($p = 0.012$), as males (30.3%) were more likely to smoke compared to females (19.6%). When analyzed by nationality, smoking was most prevalent among American/European students (34.4%), while the African group had the lowest prevalence (8.3%). This association between smoking status and nationality was found to be statistically significant ($p = 0.031$). Differences in smoking habits were also observed across academic programs, with the highest smoking prevalence among students enrolled in the BDS program (32.0%), while PharmD students had the lowest smoking rate (11.3%). The year of study did not show a clear trend in smoking prevalence, though Year 5 students had a slightly higher percentage of smokers (30.0%) compared to other years. The overall findings indicate that smoking behaviors are influenced by gender and nationality, with cultural and social factors likely playing a role.
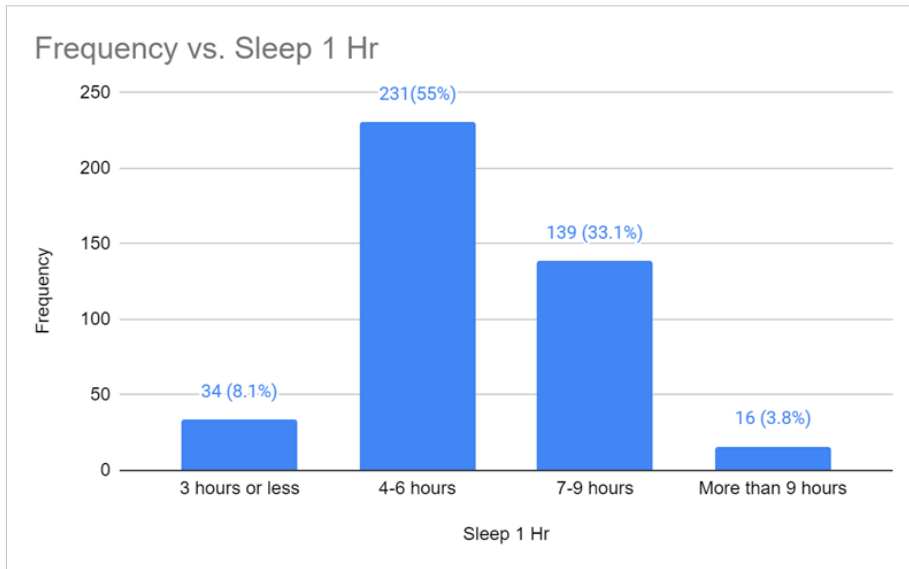
Figure 1: Sleep Duration

From the graph, we can clearly observe that 33.1% of the participants get the recommended amount of sleep every night (7-9hrs). 3.8% of the participants get more than 9 hours of sleep, 55% get 4-6 hours of sleep and 8.1% get 3 hours or less of sleep per night.
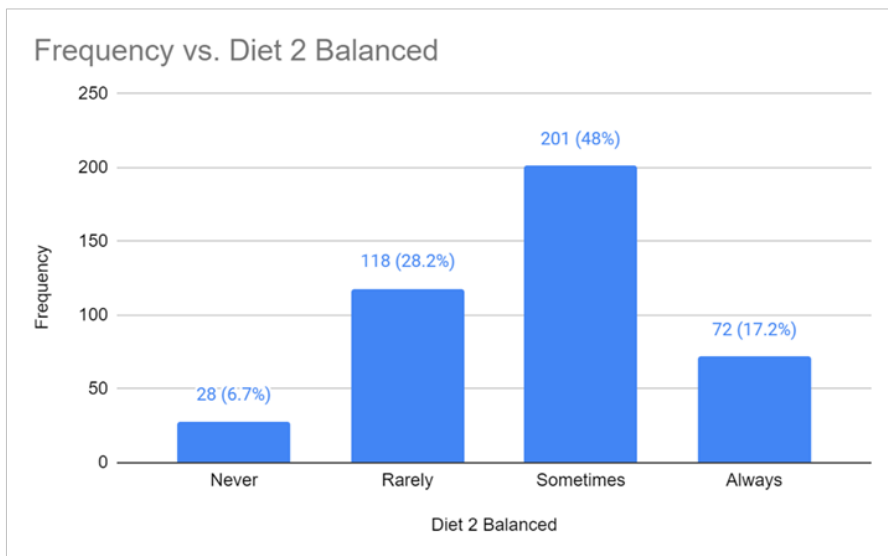

Figure 2: Participants who consume a balanced diet

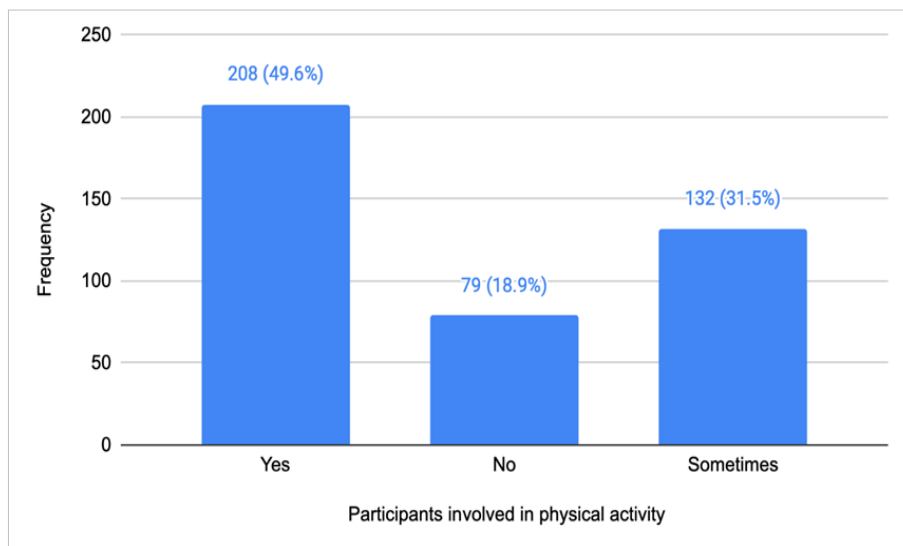Most of the participants only sometimes consume a balanced diet (48%), whilst only a small portion have said they never consume a balanced diet (6.7%).

Figure 3: Participants involved in physical activity

49.6% of the participants were involved in regular physical activity while 31.5% of the participants were sometimes involved in physical activity and 18.9% of the participants were not involved in any form of physical activity. Overall, there was a higher percentage of participants involved in physical activity.
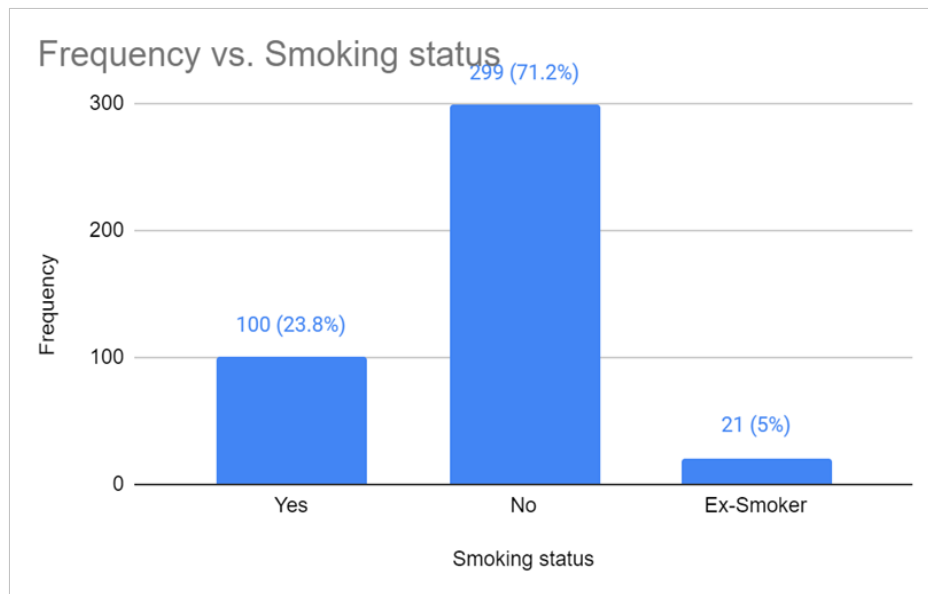
Figure 4: Smoking status

Of the 420 students surveyed the vast majority (71.2%) are non-smokers, 21 students used to smoke but no longer do (5%) and the remaining 23.8 % of students are current smokers. The prevalence of current smokers is relatively low amongst medical students at university which reflects positively on the general lifestyle of students attending the college

Discussion

The findings of this study reveal a high prevalence of unhealthy lifestyle behaviors among health science students in Ajman, UAE, aligning with global trends observed in similar populations. The results underscore the need for targeted interventions to address these behaviors, which can have long-term implications for both personal health and professional practice.

Sleep Patterns
In this study, 63.1% of participants reported unhealthy sleep duration, and 40.9% reported poor sleep quality. These findings are consistent with studies conducted among medical students in Iran and Saudi Arabia, where sleep deprivation and poor sleep quality were prevalent due to academic stress and irregular schedules [9,3]. The high prevalence of non-compliance with CDC sleep recommendations (93.8%) further highlights the need for interventions to promote better sleep hygiene, such as reducing electronic device usage before bedtime and creating conducive sleep environments [4].

Dietary Habits
The study found that 74.55% of participants had unhealthy dietary habits, with 96.4% consuming insufficient fruits and vegetables and 78.3% failing to meet milk intake recommendations. These results are consistent with studies from Lebanon and Croatia, where university students exhibited poor dietary patterns, including high consumption of fast food and low intake of nutrient-rich foods [5,6]. The significant association between diet quality and program type suggests that academic workload and curriculum structure may influence dietary choices, warranting further investigation.

Physical Activity
Physical inactivity was prevalent among 70.7% of participants, with a notable gender disparity: 68.2% of inactive participants were female. This finding aligns with studies from Thailand and Turkey, where female students reported lower levels of physical activity compared to their male counterparts [7,8]. The preference for aerobic exercises over strength training among participants suggests a need for diversified physical activity programs that cater to different interests and fitness levels.

Smoking Behavior
The smoking prevalence of 23.8% in this study is lower than rates reported in other regions, such as China and Nepal, where smoking rates among medical students ranged from 30% to 40% [9,10]. However, the use of vaping as a nicotine source was notable, reflecting a shift in smoking trends among younger populations. The significant association between smoking status and gender/nationality highlights the influence of cultural and social factors on smoking behavior, which should be considered in cessation programs.

Implications for Health Promotion
The high prevalence of unhealthy lifestyle behaviors among health science students is concerning, as these individuals are future healthcare providers responsible for promoting healthy behaviors among patients. Interventions should focus on raising awareness about the importance of sleep hygiene, balanced nutrition, regular physical activity, and smoking cessation. University-based programs, such as workshops, peer-led initiatives, and integration of lifestyle education into the curriculum, could be effective strategies [11,12].

Limitations

This study has several limitations. The cross-sectional design limits the ability to establish causal relationships. Self-reported data may be subject to recall bias, and the sample was limited to a single institution, which may affect generalizability. Future studies should include longitudinal designs and larger, more diverse samples to validate these findings [2,13].

Conclusion

In our study, the prevalence of various lifestyle factors among students was observed as follows: 34.06% had healthy sleep habits, while 65.9% had unhealthy habits; 25.45% had healthy dietary habits, contrasting with 74.55% who had unhealthy diets; 29.3% engaged in healthy levels of physical exercise, with 70.7% reporting unhealthy levels; and 76.2% were non-smokers, while 23.8% were smokers. Regarding associations found in our analysis, significant relationships were observed: diet quality showed significance with age (p=.018) and program type (p=.028); fruit and vegetable intake correlated significantly with program type (p=0.005); milk intake was significant by nationality (p=<.001); physical exercise frequency and duration showed significance by gender (p=<.001); and smoking status was significant by both gender (p=.012) and nationality (p=.031).

Recommendations

Our results show that the vast majority of students are unhealthy. The prevalence of unhealthy lifestyle is much higher in our study compared to other studies. This suggests a need to emphasize on the various important aspects of a healthy lifestyle which includes proper sleep, physical activity, a nutritious balanced diet and abstinence from smoking so as to promote better functioning both mentally and physically. It is very important to inculcate a healthy lifestyle attitude in the life of a medical student, so that as physicians of tomorrow, they are able to advise their patients regarding healthy lifestyle practices. We propose the development of a national study to include a larger population of medical students to evaluate further impact of unhealthy lifestyle on student life.

Declarations

Ethics approval and consent to participate

This research was approved by the Institutional Review Board of Gulf Medical University Ajman UAE (IRB/COM/STD/02/Nov-2021).

Data Availability

Data is available in the Department of Community Medicine, College of Medicine, Gulf Medical University; upon request, it can be provided.

Conflicts of Interest

"The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper."

Funding Statement

Authors contribution

MS, JSAR, AS, NGC, ACO, and HAM developed the concept and research proposal, designed the questionnaire, and carried them out under the supervision of MS and JSAR. JSAR prepared the manuscript with contributions from all co-authors. JSAR and MS edited the manuscript. "All authors read and approved the final manuscript."

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