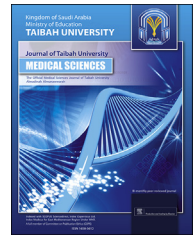




# Taibah University

## Journal of Taibah University Medical Sciences

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### Student Article

## The prevalence of smoking among male students of Majmaah University, KSA



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Received 8 December 2015; revised 27 January 2016; accepted 28 January 2016; Available online 3 March 2016

### المخلص

**أهداف البحث:** تهدف هذه الدراسة إلى دراسة معدل انتشار تدخين التبغ بين الطلاب الذكور في جامعة المجمعة، المملكة العربية السعودية. كما تهدف إلى تسجيل نمط استخدام التبغ وتحديد العوامل الاجتماعية التي تؤثر على تدخين التبغ.

**طرق البحث:** تم إدراج وتسجيل ٢٣٤٢٤ طالباً من الطلاب الذكور في هذه الدراسة المستعرضة، من ثلاث كليات بجامعة المجمعة في بحث مبني على المسح. تم اختيار كليات العلوم التطبيقية، والتربية وإدارة الأعمال بتوزيع عشوائي بسيط. واستخدمت استبانة شبيهة بمنظمة لجمع البيانات. تم تحليل البيانات باستخدام الحزمة الإحصائية للعلوم الاجتماعية.

**النتائج:** بلغت نسبة انتشار التدخين بين الطلاب الذكور ٣٠.٤٪. معظم مدخنين التبغ يستخدمون السجائر (٧٠.٧٪)، وأغلبهم (٤١.٣٪) يستهلكون ما بين ١٠ إلى ٢٠ سيجارة يومياً. بدأ معظم المدخنين التدخين في مرحلة الدراسة الثانوية. وأظهرت النتائج أن ٣٩٪ من الطلاب حاولوا الإقلاع عن التدخين مرة أو مرتين، بينما لم يحاول ٢٨.٢٪ الإقلاع عن التدخين مطلقاً. معظم الطلاب (٧٣.٤٪) يصرفون أقل من ٥٠٠ ريال سعودي شهرياً على التدخين.

**الاستنتاجات:** أظهرت هذه الدراسة أن معدل انتشار التدخين بين الطلاب الذكور في جامعة المجمعة مرتفع عن معدلات انتشار التدخين التي سجلت في دراسات أخرى بالمملكة العربية السعودية. حاول معظم الطلاب الإقلاع عن التدخين، وهذا يحث مراكز الرعاية الصحية لتقديم حملات الإقلاع عن التدخين، وزيادة الوعي بسلوكيات مكافحة التدخين في المدارس والجامعات.

**الكلمات المفتاحية:** معدل انتشار التدخين؛ التبغ؛ السعوديين؛ طلاب الجامعة؛ جامعة المجمعة

### Abstract

**Objectives:** The objective of this study was to determine the prevalence of tobacco smoking among male students

of Majmaah University, KSA. The study also aimed to record the pattern of tobacco use and determine the social factors that influence tobacco smoking.

**Methods:** In this cross-sectional study, 23,424 male students from three faculties of Majmaah University were enrolled and registered to participate in a survey-based research study. We randomly selected the faculties of Applied Sciences, Education, and Business Administration for inclusion. A semi structured questionnaire was administered to the sample, and the Statistical Package for Social Science (SPSS) was used for data analysis.

**Results:** The prevalence of smokers among male students was 30.4%. The majority of tobacco smokers (70.7%) used cigarettes, and most (41.3%) consumed between 10 and 20 cigarettes per day. The majority of smokers started smoking during secondary school. The results showed that 39% of students had attempted to quit smoking once or twice, while 28.2% never tried to quit smoking. Most (73.4%) of the students spent less than 500 Saudi Riyals (SR) on smoking every month.

**Conclusion:** This study has shown that the prevalence of smoking among male students at Majmaah University is higher than the prevalence of smoking reported by other studies in KSA. Most students had previously tried to quit smoking, which is a finding that indicates that healthcare agencies should introduce new smoking cessation campaigns and raise awareness about non-smoking attitudes in schools and universities.

**Keywords:** Majmaah University; Saudi; Smoking prevalence; Tobacco; University students

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Peer review under responsibility of Taibah University.



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## Introduction

Smoking has been identified as the single most important cause of preventable morbidity and premature death.<sup>1</sup> Although many of the adverse health effects of tobacco occur later in life, smoking leads to health complications in young people as well.<sup>2</sup> Smoking tobacco is also associated with other high-risk behaviours among young people, including abuse of other drugs, fighting and high-risk sexual behaviour.<sup>3</sup> Each day, nearly 4800 adolescents smoke their first cigarette; of these, approximately 2000 will become regular smokers.<sup>4</sup> Smoking-related health problems are a function of smoking duration (number of years smoking) and intensity (number of cigarettes/day). Most adult smokers began to smoke or had already become addicted before 18 years of age.<sup>5</sup> While many adolescents want to quit smoking, only a small number of them succeed.<sup>6</sup> Indeed, there has been a dramatic increase over the past decade in the number of college-age smokers.<sup>7</sup> Several studies have reported that the prevalence of smoking increases from the first to final years among university students, underlining the importance of targeting anti-smoking activities to the early university years.<sup>8,9</sup> For instance, students who enter college as non-smokers are 40% less likely to begin smoking if they live in a smoke-free campus.<sup>10</sup> With regard to Arab countries in particular, the World Health Organization has reported widely different prevalence rates of smoking among young people: 7% in Oman, 18% in Kuwait, 23% in Iraq, 25% in KSA and Jordan, 31% in Syrian Arab Republic, 43% in Yemen and 53% in Lebanon.<sup>11</sup> However, the trend and pattern of smoking as well as the cessation rate, especially among college university students, are largely unknown in many of these countries, including KSA. One study estimated the prevalence of active smoking among male medical students at King Saud University to be approximately 13%.<sup>12</sup> The objectives of the current study, therefore, were to determine the prevalence of tobacco smoking among male students at Majmaah University in KSA, verify the pattern of tobacco use and determine the social factors that affect smoking.

## Materials and Methods

This was a cross-sectional and institutional-based study conducted at Majmaah University located in Majmaah city, which is the capital of Majmaah province. Majmaah is located 180 km north of Riyadh, the capital city of KSA. The study population included 23,424 male university students who were enrolled in thirteen different colleges. Males were selected for this study due to the apparent high prevalence of tobacco smoking among male students. Three colleges were randomly selected for inclusion: the Faculty of Applied Science, Faculty of Education and College of Business and Administration. Stratified random sampling was applied

for student selection, which yielded a sample size of 1000 students.

Data were collected using a self-validated and pre-tested questionnaire. Three trained volunteers were nominated from the selected colleges to administer the questionnaire. The pretest was conducted in a sample from the college of computer sciences. The questionnaire contains 25 items from four categories: demographic (4 items); type and onset of smoking (4 items); psychosocial factors (8 items); and general information about side effects of smoking (9 items). We analysed the data using SPSS version 22, applying Pearson's Chi Square to confirm associations between variables. All analyses were conducted at an alpha level of 0.05. The ethics committee of Health and Basic Science Research Center of Majmaah University approved the study. A verbal consent was obtained from all participants after explaining the objectives and outcome of the study. All data were kept confidential and used only for the purpose of this work.

## Results

We obtained completed questionnaires from 990 of the 1000 students in the sample, representing a response rate of 99%. Of these, 30.4% ( $n = 301$ ) reported being tobacco smokers compared to 69.6% ( $n = 689$ ) who did not. Regarding nationality, of 927 Saudi students, 30.4% ( $n = 284$ ) were smokers and 69.6% ( $n = 651$ ) were non-smokers. On the other hand, of the 55 non-Saudi students, 30.9% ( $n = 17$ ) were smokers and 69.1% ( $n = 38$ ) were not.

Regarding the relationship between smoking and residence, the results showed that 30.5% ( $n = 257$ ) of students from urban areas were smokers, while 29.9% ( $n = 44$ ) of students from rural areas were smokers (see Table 1).

Figure 1 shows that the prevalence of smoking among students in the Applied Sciences College was 2.05%, while the prevalence among those in the College of Education was 9.02%. The prevalence among students in the Business Administration College was 19.26%. Analyses yielded a significant association between the different colleges and smoking prevalence ( $p = 0.041$ ).

A majority of students reported using cigarettes as their primary smoking agent ( $n = 212$ , 70.7%), followed by water pipes ( $n = 82$ , 27.3%) and cigars ( $n = 6$ , 2.0%). Regarding the number of overall tobacco substances used per day, 42% ( $n = 121$ ) of the reported tobacco users use 1–10 substances per day, 41.3% ( $n = 124$ ) use 11–20 substances daily and 18.5% ( $n = 56$ ) use more than 20 tobacco substances per day. Of students who smoke, 49.8%, 25.9% and 20.9% began

**Table 1: Prevalence of smoking and related social factors.**

Factor	Smoking		Total	p
	Yes	No		
Nationality:				
Saudi	284 (30.4%)	651 (69.6%)	935 (94.4%)	0.94
Non-Saudi	17 (30.9%)	38 (69.1%)	55 (5.6%)	
Total	301 (30.4%)	689 (69.6%)	990 (100%)	
Residence:				
Urban	257 (30.5%)	586 (69.5%)	843 (85.2%)	0.95
Rural	44 (29.9%)	103 (70.1%)	147 (14.8%)	
Total	301 (30.4%)	689 (69.6%)	990 (100%)	

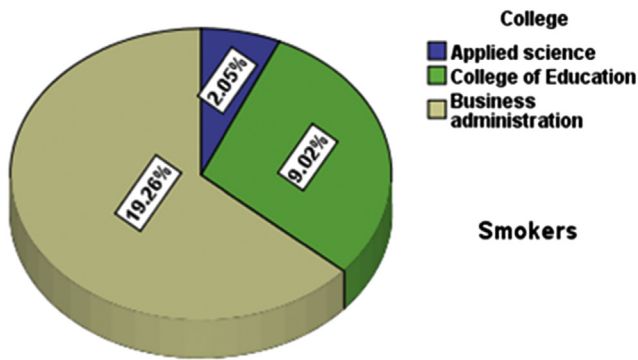


Figure 1: Prevalence of smoking among different colleges.

smoking in secondary school, intermediate school and the university, respectively. The percentage that started in primary school and kindergarten was 1.7%.

A majority of the students who smoke ( $n = 117$ , 39.1%) had tried to quit smoking once or twice, while a smaller proportion ( $n = 99$ , 32.8%) had tried 3 times or more. Eighty-five students (28.2%) never tried to quit smoking. With regard to monthly financial expenditures on tobacco, a majority of smokers (73.4%) spend less than 500 Saudi Riyals (SR) (equivalent to \$133). Fewer (23.3%) spend 500–1000 SR (\$133–267), and a small proportion (2.0%) spend more than 1000 SR monthly (\$267), as shown in Table 2.

## Discussion

The prevalence of smoking in the sample was 30.4%. This prevalence is higher than the prevalence rate of 27.8% reported in 2014 among dental students at King Saud University, KSA.<sup>13</sup> In addition, that number is higher than the 24.8% prevalence rate among male medical students in the western region of KSA<sup>14</sup> and the 17.6% rate among medical students at King Fahad Medical City in Riyadh, KSA.<sup>15</sup> This finding is also higher than the findings of a study conducted among students of Malaysian University, which revealed a prevalence rate of 29%.<sup>16</sup> On the other hand, the prevalence rate in this sample is lower compared to findings from a study of smoking among Jordan University students that showed an overall prevalence of 50.2%.<sup>17</sup> Our prevalence rate in this sample is also lower than the 37% prevalence rate of smoking among secondary school students in Jeddah.<sup>18</sup> Most smokers were from urban rather than rural areas, but the relationship between tobacco smoking and residence was not significant, contradicting a previous study that showed a significant difference in smoking prevalence between urban and rural areas.<sup>19</sup> In the present study, there was a significant association between the different colleges and smoking ( $p = 0.041$ ). Specifically, we found the highest prevalence of smokers from the College of Education ( $n = 88$ , 33.2%), followed by Business Administration ( $n = 188$ , 30.8%). The College of Applied Sciences showed the lowest smoking prevalence ( $n = 20$ , 19.8%). This finding is in line with another study among applied medical science students at King Saud University, KSA.<sup>20</sup> The primary smoking agent among the smokers in our sample was cigarettes ( $n = 212$ , 70.7%), followed by water pipes ( $n = 82$ , 27.3%) and cigars ( $n = 6$ , 2.0%). While this finding is consistent with another study conducted in KSA,<sup>18</sup> it contradicts another study

Table 2: Student tobacco use.

Item	Frequency	Percent
<b>Type of tobacco used:</b>		
Cigarette	213	70.7%
Water pipe (Shisha)	82	27.3%
Cigar	6	2.0%
Total	301	100.0%
<b>Number of tobacco uses per day</b>		
1–10	121	40.2%
11–20	124	41.3%
>20	56	18.5%
Total	301	100.0%
<b>Location of first time smoking:</b>		
University	63	20.9%
Secondary school	150	49.8%
Intermediate school	78	25.9%
Primary school	5	1.7%
Kindergarten	5	1.7%
Total	301	100.0%
<b>Cessation status</b>		
Never	85	28.2%
1–2	117	39.0%
Three or more	99	32.8%
Total	301	100%
<b>Monthly expenses for tobacco/SR:</b>		
<500	221	73.4%
500–1000	70	23.3%
>1000	10	3.3%
Total	301	100.0%

conducted at King Saud University, which found that most smokers used a water pipe.<sup>12</sup> This may represent a growing trend and present-day popularity in using water pipes. Our results also showed that the number of cigarettes used per day was medium (11 to 20). This carries a high risk for smokers because smoking tobacco one to four times daily carries a risk of 2.74 dying of ischemic heart disease and 1.14 from lung cancer compared to nonsmokers.<sup>21</sup> Most of the smokers in our sample began smoking in secondary school. This finding is inconsistent with the results from a national survey of the general public in the kingdom that showed that initiation of tobacco smoking was more common around the age of nineteen years.<sup>22</sup> At such an age, students are expected to be in the college.

We found that the majority (71.8%) of student smokers had previously tried to quit smoking once or twice; however, more than one-quarter of the students had never tried to quit smoking tobacco. This finding is higher than a result from cessation trials among students at King Faisal University, Al Hassa, KSA and secondary school students in Jeddah, which showed that 60% and 63.2%, respectively, of the smokers there had tried to quit smoking.<sup>17,18</sup>

## Limitations of the study

A limitation of this study arises from the notion that some students may not disclose their smoking status even though they were told that their data would be kept confidential.

## Conclusion

The prevalence of smoking among male students at Majmaah University is high. Most of the students are

moderate smokers and initiated smoking during secondary school. A majority of students had tried to quit smoking at least once; this finding may be a basis on which to develop cessation programs, raising awareness and reinforcing non-smoking attitudes in area schools and universities.

### Recommendations

- 1 Arrange yearly smoking campaigns on the campus to increase the awareness of smoking.
- 2 Increase the number of cessation smoking clinics at the university.
- 3 Help smokers cope with the psychosocial parts of their lives.
- 4 Help smokers find ways to improve their financial status and income.

### Conflict of interest

The authors have no conflict of interest to declare.

### Authors' contribution

SGA conceived and designed the study, conducted research, provided research materials, and collected and organized the data. EYM analyzed and interpreted data. MAA wrote initial and final draft of article, and provided logistic support. MRR finalized and corrected the interpretation of data. OSA collected the data as well and reviewed the final draft of article. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

### Acknowledgements

We acknowledge Business and Administration, Applied Medical Sciences, the College of Education and their associated students for their cooperation in this work. We further thank the rector of Majmaah University, who supported this research. We would like to express our gratitude to Dr. Mohammed A. Al-Mansour, Dr. Elsadig Y. Mohamed, Dr. Moattar R. Rizvi, (the supervisors of our research) for their guidance and support in this research.

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**How to cite this article:** Al-Ghaneem SG, Al-Nefisah OS The prevalence of smoking among male students of Majmaah University, KSA. *Journal of Taibah University Medical Sciences* 2016;11:175–178.