

## Smoking Behavior among Dental Professionals in the Northern Emirates, UAE

Jayakumary Muttappallymyalil<sup>1\*</sup>, Danavanthi S Bangera<sup>2</sup>, Mohamed Tahir Takana<sup>3</sup> and Aji Gopakumar<sup>4</sup>

<sup>1</sup>Department of Community Medicine College of Medicine, Gulf Medical University, Ajman, UAE

<sup>2</sup>Thumbay Dental Hospital & Research Centre, Ajman, United Arab Emirates

<sup>3</sup>Al Madina Primary Health Care Centre, Ajman, United Arab Emirates

<sup>4</sup>Institutional Research Unit, Department of Community Medicine, College of Medicine, Gulf Medical University, Ajman, United Arab Emirates

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### ABSTRACT

**Objective:** Cigarette smoking has emerged as serious public health problem. Dentists being one of the vital healthcare providers play a significant role in assisting the patients to quit smoking. The objective of this study was to assess the smoking behavior of the dentists practicing in the Northern Emirates, UAE.

**Materials & methods:** An interviewer administered questionnaire based cross sectional study was conducted among dentists. Questionnaire included socio-demographic characteristics, details of clinical practice of dentists and tobacco use behavior of the dentists. Data was fed on to Excel spreadsheet. SPSS version 22 was used for analysis. Chi square test was used to test the association between dependent and independent variables. Level of significance was established at  $p \leq 0.05$ .

**Results:** Two hundred and fifty dentists participated in the study. The mean age was 38.3 years ( $SD \pm 7.8$ ) and male to female ratio 1:0.76. Majority of the participants 159 (63.6%) were general practitioners. Of the total participants, 206 (83%) had never used any tobacco products and 31 (12%) out of 44 (17%) were current tobacco users. Among the current users, nearly half of the respondents consumed cigarettes and the most commonly reported reason for using tobacco products (45.2%) was fun followed by recreation (32.3%) and to relieve stress from work (32.2%). The most commonly reported reasons for quitting tobacco use among the past users (5%) were health concern (26.3%) and self-motivation (26.3%). Males reported tobacco consumption significantly higher than that of females. It was observed that tobacco consumption was significantly more among the individuals from the Mediterranean Region as compared to those from other regions.

**Conclusion:** Tobacco consumption was observed to be significantly more likely among males and respondents from the Mediterranean Region as compared to females and those from other regions. Larger research study is recommended involving larger demographic area of the country.

**Keywords:** Dentists, Smoking behavior, Northern emirates, UAE

**Abbreviations:** UAE: United Arab Emirates; RYO: Roll your own; US: United States; WHO: World Health Organization; EMR: Eastern Mediterranean Region; CDC: Centre for Disease Control; UK: United Kingdom

### INTRODUCTION

There are different forms of tobacco available and consumed all over the world. Cigarettes are predominantly used worldwide accounting for 96% of global sales. Consumption of the cigarettes by the smokers is about 5.9 trillion in 2009 showing 13% rise in cigarette consumption in the past decade [1-2]. Other forms of tobacco are Kreteks, Roll your own (RYO) cigarettes, pipes, cigars, sticks and water pipes [1,3]. Water pipes otherwise called as Shisha, hookah, narghile or hubble bubble, most predominantly used in the Eastern Mediterranean region. Smokeless tobacco is also available in different forms such as chewing tobacco, moist

**Corresponding author:** Jayakumary Muttappallymyalil, Department of Community Medicine College of Medicine, Gulf Medical University, Ajman, UAE, Tel: 971554559159; E-mail: drjayakumary@gmail.com, drjayakumary@mygmu.ac.ae

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and dry snuff [1, 4]. The second most common form of tobacco used in the Middle East particularly in the UAE, after cigarettes, is midwakh [5].

In the Middle East, cigarette smoking has emerged as serious public health problem. In a largest survey conducted in the UAE, the point prevalence of active cigarette smoking among men and women was 24% and <1% respectively [6]. Prevalence of smoking among medical students was reported as 3% in US and 58% in Japan. While prevalence of smoking was reported to be higher among dental students [7]. UAE has experienced very rapid growth resulting in large migration of population. With the growth in economy, the consumption of cigarettes and other forms of tobacco has also increased. Dentists being one of the vital healthcare providers play a significant role in helping the patients to quit smoking. The objective of the study is to assess the smoking behavior of the dentists practicing in the Northern Emirates, UAE.

## MATERIALS & METHODS

This paper is a part of the study conducted to assess the attitude and practice of the dentists practicing in the Northern Emirates, UAE. This research adopted a cross sectional study design to achieve the objectives. Study population in the research was dentists practicing in the Northern Emirates, UAE, irrespective of gender and nationality and including general dental practitioners and all specialties. Dentists who were not willing to participate and exclusively academicians were excluded from the study. Two hundred fifty dentists practicing in the Northern Emirates participated in the study.

Research was conducted among dentists practicing in Hospitals, dental clinics, poly clinics, dental clinics in medical center and dental centers in Primary Health Care Centers in Ajman, Sharjah, Umm Al Quwain, Ras Al Khaimah and Fujairah. Ethical approval from Research Ethics Committee of Gulf Medical University, Ajman and Ministry of Health, Al Qassimi, Sharjah was obtained. Dentists were approached personally and purpose of the study was explained to them. Written consent was obtained prior to the administration of the questionnaire. Personal identification details were not included in the questionnaire thus maintaining the anonymity. Participation is completely voluntary and they had the right to withdraw from the study at any point of time. Interviewer administered the questionnaire and participants were recruited conveniently till the required sample size achieved. After completion of the data collection, data was fed in to Excel spreadsheet. SPSS version 22 was used for analysis. Results are presented as frequency and percentages. Chi square test was used to test the association between dependent and independent variables. Level of significance was established at  $p \leq 0.05$ .

## RESULTS

This cross sectional study was conducted among two hundred fifty dentists to assess the smoking behavior of dentists practicing in the Northern Emirates, UAE. Distribution of gender showed that 108 (43.2%) were males and remaining 142 (56.8%) were females. The male to female ratio was found to be 1:0.76. The respondents' age was classified into two broad categories as less than 40 years and greater than and equal to 40 years old. Most of the participants 150 (60.0%) were in the age group less than 40 years followed by 100 (40.0 %) in the age group greater than and equal to 40 years. Age of the participants ranged from 26 years to 73 years. Mean age of the participants with standard deviation was  $38.3 \pm 7.8$  years, mean age of the male participants with standard deviation was  $40.8 \pm 7.9$  years and mean age of female participants with standard deviation was  $36.4 \pm 7.2$  years. Nationality of the participants was categorized according to WHO classification. Nearly 113 (45.2%) participants were from Eastern Mediterranean Region (EMR) and 137 (54.8%) from other regions. Level of education of the respondents' was categorized as graduates and postgraduates and above. Of the total participants, 154 (61.6%) had education up to graduate level and 96 (38.4%) were post graduates and higher level. Details are given in **Table 1**.

**Table 1.** Distribution of participants according to socio-demographic characteristics (N=250).

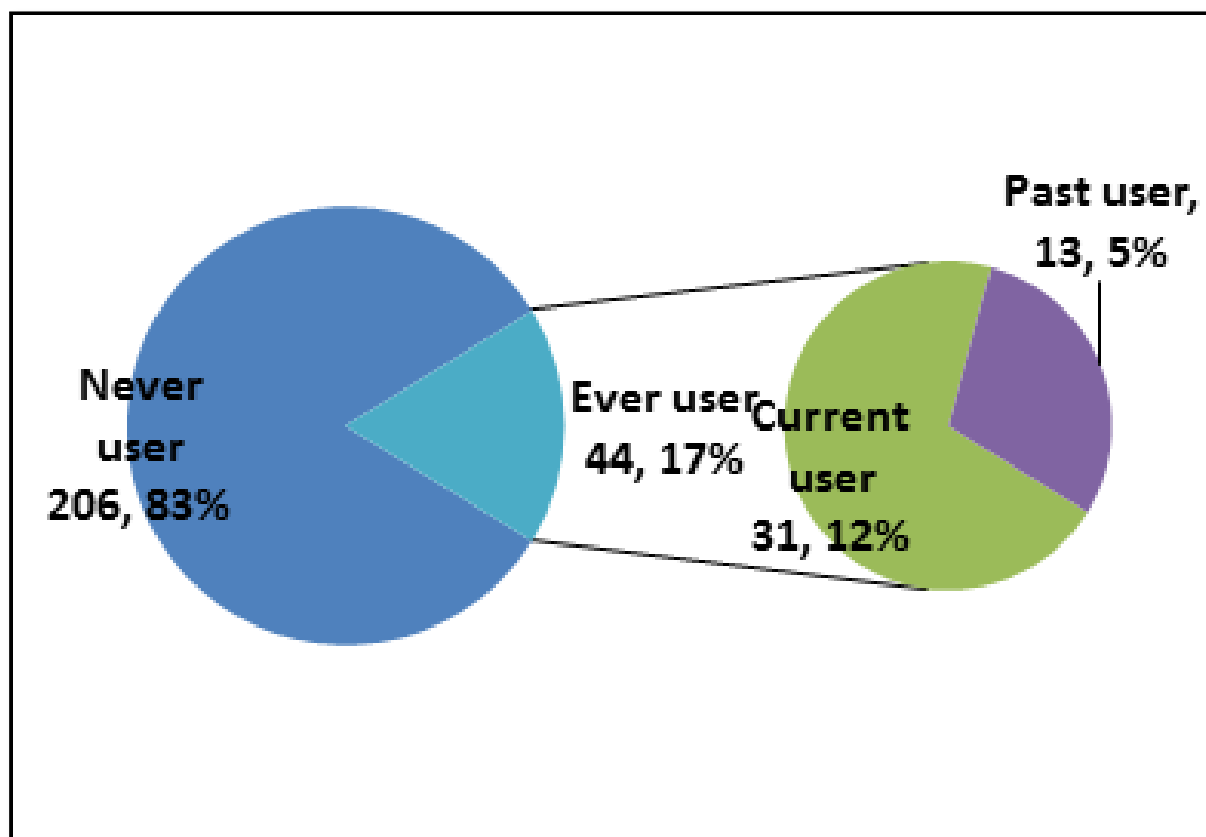
| Socio-demographic characteristics | Groups                             | No. | %    |
|-----------------------------------|------------------------------------|-----|------|
| Age groups (in years)             | <40                                | 150 | 60.0 |
|                                   | $\geq 40$                          | 100 | 40.0 |
| Gender                            | Male                               | 108 | 43.2 |
|                                   | Female                             | 142 | 56.8 |
| Nationality                       | Eastern Mediterranean region (EMR) | 113 | 45.2 |
|                                   | Other regions                      | 137 | 54.8 |
|                                   |                                    |     |      |
| Education                         | Graduate                           | 154 | 61.6 |
|                                   | Postgraduate & higher              | 96  | 38.4 |

With regard to the type of practice, 159 (63.6%) participants were practicing general dentistry and 91 (36.4%) were practicing in their specialized area. Specialties of the participants were prosthodontics, implantology, oral maxillofacial surgery, endodontics, periodontics,

orthodontics and restorative dentistry. Ninety eight dentists (39.2%) had less than or equal to 10 years of total experience in clinical practice and 152 (60.8%) were with over 10 years of clinical experience. Of the total participants, 190 (76.0%) had less than or equal to 10 years of clinical experience in the UAE, 60 (24.0%) had clinical experience of over 10 years in the UAE. Average total duration of practice of the dentists was 13 years with minimum of 11 months and maximum of 48 years, while average duration of practice of dentists in UAE was 7 years with the minimum of 10 months and maximum of 35 years. Around 171 (68.4%) dentists consulted less than 60 patients per week, 79 (39.6 %) consulted over 60 patients per week. Among the participants, most of them 155 (62.0%) were practicing in

private dental centers, followed by 43 (17.2%) in private hospitals, 33 (13.2%) in government dental centers and least 19 (7.6%) participants were practicing in government hospitals. The average number of patients seen on a weekly basis was 48 with minimum of 4 and maximum of 200.

**Figure 1** shows the distribution of the participants according to self-reported tobacco use. Respondent's tobacco use was categorized as never user and ever user. Ever users were again grouped in to current user and past user. Of the 250 participants, 206 (83%) had never used any tobacco products. Thirty-one dentists (12%) out of 44 (17%) were current tobacco users and only 13 (5%) were past users.



**Figure 1.** Distribution of participants according to self-reported tobacco use (N=250).

Average age at initiation for shisha, cigarette and cigar with standard deviation was found to be  $24.8 \pm 9.8$  years,  $21.7 \pm 4.0$  years and  $17.5 \pm 3.5$  years respectively. Average age of stopping shisha and cigarette in the past users (13) was  $26.5 \pm 9.7$  years and  $29 \pm 6.1$  years respectively. Among the current users, there were 16 (51.6%) dentists who used cigarettes, 6 (19.4%) used shisha, one (3.2%) consumed cigar and 8 (25.8%) dentists were combined users.

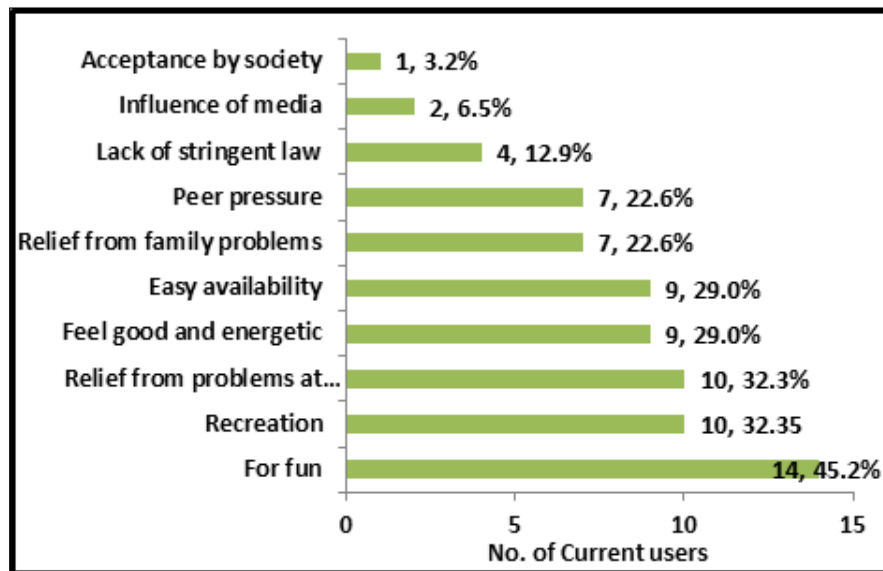
About 14 (45.2%) of current users reported that they are using the tobacco products for fun, while 10 (32.3%) dentists used tobacco for recreation and 10 (32.3%) used for getting

relief from problems at work place. Nine (29.0%) current users reported that they are using tobacco products because it is easily available and they feel good and energetic. Around 7 (22.6%) dentists reported peer pressure and relief from family problems as the reasons for using tobacco products. Least opted reasons were lack of stringent law 4 (12.9%), influence of media 2 (6.5%) and acceptance by society 1 (3.2%). Distribution of current users according to the reasons for using tobacco products is shown in **Figure 2**.

Past users reasons for quitting tobacco use were 'health concern' 5 (26.3%) and 'self-motivation' 5 (26.3%). Five

(26.3%) past users reported 'no specific reason' as one of the reason of quitting tobacco use. Other reasons reported by the

dentists were 'didn't like it' 2 (10.5%), 'no friends to share' 1 (5.3%) and 'religious' 1 (5.3%).



**Figure 2.** Distribution of current users according to reasons for using tobacco products (N=31).

**Table 2** represents the association between participants' socio-demographic characteristics and their current habit of tobacco consumption. Among the participants with less than

40 years of age, 135 (90.0%) reported that they had never used any tobacco products and 15 (10.0%) had consumed tobacco products. While among the participants with less

**Table 2.** Association between participants' socio-demographic characteristics and their current habit of smoking (N=250).

| Socio-demographic characteristics | Groups                 | Tobacco use |      |          |      | p value        |
|-----------------------------------|------------------------|-------------|------|----------|------|----------------|
|                                   |                        | User        |      | Non-user |      |                |
|                                   |                        | No.         | %    | No.      | %    |                |
| Age groups (in years)             | <40                    | 15          | 10.0 | 135      | 90.0 | NS<br>(p=0.16) |
|                                   | ≥40                    | 16          | 16.0 | 84       | 84.0 |                |
| Gender                            | Male                   | 29          | 26.9 | 79       | 73.1 | p≤0.001        |
|                                   | Female                 | 2           | 1.4  | 140      | 98.6 |                |
| Nationality                       | EMR                    | 20          | 17.7 | 93       | 82.1 | p≤0.05         |
|                                   | Other regions          | 11          | 8.0  | 126      | 92   |                |
| Education                         | Graduate               | 19          | 12.3 | 135      | 87.7 | NS<br>(p=0.97) |
|                                   | Post graduate & Higher | 12          | 12.5 | 84       | 87.5 |                |

than 40 years of age, 135 (90.0%) reported that they had never used any tobacco products and 15 (10.0%) had consumed tobacco products. While among the participants with over 40 years of age, 84 (84.0%) mentioned that they had never consumed any tobacco products and 16 (16.0%) reported that they had consumed tobacco. Consumption of tobacco use was more among participants with greater than

40 years as compared to those with less than 40 years and this observation was not statistically significant (p=0.16). Among male participants', 79 (73.1%) responded that they never used any tobacco products while 29 (26.9%) responded that they had consumed tobacco products. Among 142 female participants, 140 (98.6%) had never used tobacco while only 2 (1.4%) had used tobacco products.

Tobacco consumption was observed more in males as compared to female participants and the association observed was statistically significant ( $p \leq 0.001$ ). Of the total participants from Eastern Mediterranean Region, 93 (82.3%) reported that they never consumed tobacco and 20 (17.7%) reported that they had used tobacco. Among the participants from other regions, 126 (92.0%) reported that they never used tobacco while 11 (8.0%) reported that they have consumed tobacco products. It was observed that tobacco consumption was more among the Eastern Mediterranean Region as compared to those from other regions and the association observed was statistically significant ( $p \leq 0.05$ ). Among graduates, 135 (87.7%) mentioned that they had never consumed tobacco while 19 (12.3%) had consumed tobacco. Of the participants with post-graduation and above, 84 (87.5%) had not used tobacco at all and 12 (12.5%) had consumed tobacco. Tobacco consumption has found to be similar with regard to level of education but the association observed was not statistically significant ( $p = 0.97$ ).

The association between details of clinical practice and participants' tobacco consumption showed, with regard to type of practice, of the total general practitioners, 139 (87.4%) reported that they never consumed tobacco and 20 (12.6%) reported that they used tobacco. While among the participants who were practicing in their specialized area, 80 (87.9%) have never used tobacco and 11 (12.1%) responded that they have consumed tobacco. Tobacco consumption has found to be similar both among general practitioners and specialists but the association was not statistically significant ( $p = 0.91$ ). Among the participants with less than and equal to 10 years of clinical practice, 90 (91.8%) reported that they had never used tobacco while 8 (8.2%) reported that they were tobacco users. From the participants with over 10 years of clinical practice, 129 (84.9%) mentioned that they never consumed tobacco and 23 (15.1%) mentioned that they had used tobacco. It was observed that the personal use of tobacco was more with an increase in the duration of clinical practice and the observation was not statistically significant ( $p = 0.10$ ). Among the participants' who consulted less than 60 patients per week, 154 (90.1%) responded that they were non-tobacco users while 17 (9.9%) responded as tobacco users. From the participants' who consulted over 60 patients per week, 65 (82.3%) reported that they are non-users while 14 (17.7%) reported that they have used tobacco products. Tobacco consumption was seen more among the respondents who consulted over 60 patients per week as compared to the those who consulted less than 60 patients per week but this association observed was not statistically significant ( $p = 0.08$ ). With regard to type of setting, among the participants in government setting, 48 (92.3%) reported that they never consumed tobacco while only 4 (7.7%) reported to be users. Of the 198 participants practicing in private setting, 171 (86.4%) responded that they never used tobacco while 27 (13.6%) responded to be users. It was observed that use of tobacco was higher among the participants practicing

in private setting as compared to those practicing in government setting but the association observed was not statistically significant ( $p = 0.25$ ). Of the 23 participants who attended the training program in tobacco cessation, 19 (82.6%) revealed that they have never consumed tobacco while only 4 (17.4%) reported to be tobacco users. Among 227 participants who have not attended any training program, 200 (88.1%) reported that they have not consumed tobacco whereas 27 (11.9%) reported that they were tobacco users. Tobacco consumption was seen more among the participants who had received training as compared to those who did not receive any training in tobacco cessation and this association observed was not statistically significant ( $p = 0.50$ ).

## DISCUSSION

Today tobacco epidemic is one of the greatest threats to global health. Tobacco use has a detrimental impact and consequences not only on the general health but also on oral health. Dentists play a major and motivating role in combating the tobacco epidemic. Along with supporting the wider tobacco control measures, dentists can help their patients to quit tobacco by applying 5A's approach to their patients. This may be the single most important intervention that dentists can provide to improve their patient's overall health. It is imperative that the dentists recognize to include intervention for tobacco use prevention and cessation along with provision of dental treatment. Several recent publications have recommended the roles and responsibilities of the dentists in provision of tobacco intervention [8-18,19-34].

This research study aimed to determine the attitude and practice regarding tobacco cessation intervention among the dentists practicing in the Northern Emirates, UAE. This study also intended to identify the perceived factors that facilitate and prevent these dentists in catering tobacco cessation services.

Majority of the dentists participated in the study were general dental practitioners (63.6%). A similar observation was made in a study conducted in India, 83.6% were general practitioners and only 16.4% were specialists [25]. While the study in Saudi Arabia showed only over half of the participants were general practitioners [14]. This could be explained as majority of the dentists in the UAE were practicing general dentistry.

Studies carried out in the US had around 75% of respondents practicing for more than 15 years [12,19]. While the study done in Iran had around 84% of participants with more than 5 years of clinical experience [22]. Whereas 60.8% of the participants in the current study had over 10 years of clinical experience. Probable reason could be most of the dentist participated in this study were expatriates indicating floating population of the UAE.



Percentage of surveyed dentists in the current study who consult and treat less than 60 patients per week is consistent with the findings of the study done in Saudi Arabia [14]. In a survey conducted among dental center in 2010 by American Dental Association; average number of patients seen by the dentists per week is 69 [35].

Participation of dentists practicing in the private settings in the present survey was 79.2%, much higher in comparison to the studies done in Hong Kong (7%) and Kelantan (10.7%) [13,11]. This may due to large number of private hospitals and dental centers present in the Northern Emirates, UAE and the previous two studies have included dentists employed in the Universities while this study have excluded dentists who are exclusively academicians.

In this study, 12% of the total respondents self-reported as current users and 5% reported to be ex-smokers. While the study conducted in Hong Kong reported around 5% as current smokers and 2% as ex-smokers [13], while in the study conducted in Japan, 18% of the participants reported being the current smokers [21]. Whereas 14.2% were reported as current smokers in the study done in Saudi Arabia [14]. According to WHO Global Adult tobacco Survey report, although prevalence of tobacco use in the Eastern Mediterranean region is comparatively higher than other regions but lower than Western Pacific and European Region [36]. It seems that health professionals are considered as role model and if health professionals are not tobacco consumers then the effectiveness of counseling to patients will be increased [26]. However, prevalence of tobacco use obtained in this study might not be indicative of the tobacco use prevalence among all the dentists in the country as not all dentists were included in this study.

Association of tobacco consumption of the participants with socio-demographic characteristics and details of clinical practice has been explored in the survey. Tobacco consumption was reported to be more among older participants (>40 years old) than that of younger participants but not significantly associated. Although stress can be a contributing factor for tobacco consumption, but majority of the dentists reported of using tobacco for fun. This is not in line with the survey conducted among dentists in Hungary which reported that smoking habit did not significantly differ between the dentists aged above 30 years [20]. Tobacco consumption was observed significantly high in males as compared to female participants ( $p \leq 0.001$ ). This finding is in conformity with results reported by Margherita et al. [37], Asfar et al. [38] and Awan et al. [28]. Perhaps this reflects domination of male in terms of smoking behavior in Arab culture, thus make men more likely to indulge in tobacco consumption than women [28]. The finding with respect to gender is also in agreement with that of the studies done in Sudan and Kenya [39,40]. This partially reflects to the fact that it is socially and morally

unacceptable for females to use any kind of tobacco and females would be more skeptical of admitting it.

In the present study, participants from EMR reported to consume significantly more tobacco as compared to those from other regions. Although studies have been reporting a reduction in prevalence of smoking among physicians in several developed countries like UK, US and Australia, higher rates still exist in countries like China (45%), Kuwait (38%) and UAE (36%) [41]. This signifies the need for implementing more stringent tobacco control policy in the country. Prevalence of consuming tobacco in this study is comparable to those in other countries reported in previous studies done in Syria, Kuwait, Saudi Arabia [28,38,42] Even though there is no significant relation observed between the nationalities and tobacco use behavior, prevalence of smoking is more apparent among the health care professionals in Eastern Mediterranean Region. Tobacco consumption has found to be increased with higher education level and respondents' practicing in specialized area but no statistically significant association was observed between education and tobacco consumption in the present survey. Apparently this can be reflected to the fact that stress can lead to increase in behavior of tobacco consumption among specialists. Present survey also observed that personal use of tobacco was more with an increase in the duration of clinical practice but not significantly associated. This finding is comparable to reports by Prakash et al. [19], however no relationship has been assessed on influence of duration of practice on smoking behavior of the dentists. Surveyed respondents consulting more than 60 patients per week consumed more tobacco but not significantly associated. Tobacco consumption was observed to be high among the participants practicing in private setting and those who attended training program but the association observed was not statistically significant. This finding is in line with the study conducted in Ontario among dental health professionals [43]. These associations can be attributed to the fact of self-reported behavior of the dentists.

As per the report by Centre for Disease Control (CDC), the most commonly reported reason for using tobacco products was acceptability in the society [44]. While majority of the tobacco users (45.2%) in this survey cited as 'For Fun' as the most common reason for consuming the tobacco products. However, this could be correlated as self-reported reason of tobacco consumption. Study conducted among dentists in India showed that most of the participants believed to have stringent laws against public use of tobacco and to increase the warning labels and price on tobacco products [23]. Present study also had similar attitude towards personal use of the tobacco. Although 60% of them accepted their use of tobacco, 80.6% of participants agreed with the ban of tobacco use in public places and 67.7% of them felt like quitting. Most of the participants consuming tobacco in this survey perceived that all the tobacco products have a severe risk to health. Although tobacco control policy has

been established, actual implementation of the tobacco control policies is far from effective.

This study has some inbuilt limitations. Favorable responses of the participants may lead to overestimation of the results. However, the findings obtained by survey involving dentists can be used as a baseline data to implement and if required modify tobacco cessation interventions in the dental settings.

## CONCLUSION

Only 12% of the total respondents self-reported as current users of smoke form of tobacco. Tobacco consumption was observed to be significantly more likely among males and respondents from EMR as compared to females and those from other regions. However, larger research study is recommended involving larger demographic area of the country.

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