

Prevalence of Dokha Use among Secondary School Students in Ajman UAE

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ABSTRACT

Background: Dokha is a form of smoking native to UAE on which there is very little published literature especially among adolescents and this form of smoking has been not been addressed adequately in the smoking cessation strategies in UAE

Objectives: To assess the prevalence of dokha smoking among male secondary school students in Ajman UAE.

Materials and methods: A cross sectional survey was conducted by stratified random sampling among male secondary school students in Ajman, UAE. A total of 560 participants filled in self-administered questionnaires on dokha use

Results: The prevalence of ever smokers was 39%; ever dokha smokers was 36% and current dokha smokers was 24%. The prevalence is very high when compared to other forms of smoking in the region and globally. Prevalence increased with increasing age and grade of students, prevalence of ever smokers, ever dokha smokers and current dokha smokers was lower in students in the science stream. 40% of the smokers used dokha, cigarettes and shisha, 30% used dokha and cigarettes, and 21% used dokha alone. 30% of the students smoked dokha on all days of the month.

Conclusion: The prevalence of ever smokers, ever dokha smokers and current dokha smokers is very high. There is an urgent need for specific health promotion programs tailored to this age group on prevention of dokha smoking and policies restricting the availability of dokha to this age group.

Keywords: dokha, prevalence, student

INTRODUCTION

Globally tobacco use causes almost six million deaths each year, and by 2030 the number of deaths is estimated to be more than 8 million¹. 10% of all deaths due to cardiovascular diseases, 22% of all cancer deaths and 36% of all deaths from diseases of the respiratory system are attributed to tobacco use². Cardiovascular diseases are increasing globally as well as UAE and it is a leading cause of death in the UAE^{3,4} and of the “Big four” public health issues identified in the UAE⁵ three of them viz. cardiovascular disease, cancers and respiratory disorders have direct links to smoking, thereby making it a number one priority issue to be addressed urgently. Risk behaviors such as smoking, begins at a younger age and is known to increase the risk of chronic diseases later on in life⁶ and on an average, smokers die 13 to 14 years earlier than nonsmokers⁷.

Dokha is smoked using a pipe with a small cup popularly known as Midwakh. The cup can hold approximately 0.5 grams of dokha for each use. Typically smokers need two inhalations to completely burn the dokha before it needs to be refilled; a smoker typically smokes twelve times in a day which is the equivalent of smoking about six grams of dokha a day⁸. A recent study among multi ethnic high school students in Dubai revealed that 23.4% of the students were current users of tobacco and 54.8% of the current tobacco users were dokha smokers which was much higher than cigarettes 23% and shisha 22.2% indicating that dokha is a popular option for these youngsters. Another important finding of this study was that among all current tobacco users, the average reported Hooked On Tobacco Checklist (HONC) score (scale range 0-10) was 4.2 with a standard deviation of 3.0 where scores above zero indicate increasing loss of control over use which may reflect the addictive potential of this form of smoking⁹. The single largest study on dokha use among adults in the UAE reported the prevalence of smoking in Abu Dhabi to be about 25% and dokha was found to be the second most common form of smoking (15%) after cigarettes (77.4%)⁸. A study among medical university students in Ajman UAE showed that the prevalence of dokha smoking was 25%¹⁰.

There is no study till date on the chemical analysis of dokha, the general description on dokha bottles indicates that it is a tobacco product with the amount of nicotine specified on it; the labels also indicate the nicotine content. Only one study among 97 dokha users showed that smoking dokha has an acute effect on the heart rate, systolic blood pressure and respiratory rate similar to that seen in cigarette and shisha smokers¹¹.

Smoking dokha is attractive to younger age groups because dokha is cheaper than smoking cigarettes as a week's supply of dokha is about \$3USD compared to \$21 USD for the cigarettes⁸. Other reasons are lack of odor, absence of staining of lips, and it is quicker¹¹, thereby the smoker can practice quick smoking more secretly.

There is ample scientific evidence about pattern of use, health effects and cessation efforts of cigarettes; however, it is apparent that alternative forms of tobacco products pose significant health risks and warrant attention. Alternative tobacco products such as dokha may also serve as the first step to long-term tobacco use. Although dokha is a common form of smoking in UAE, there is little literature on the prevalence of dokha use among secondary school students. Behaviors are determined in this age group and it is imperative to intervene at this stage. This study will shed some light on the prevalence of dokha use among male secondary school students in the public schools in Ajman UAE.

MATERIALS AND METHODS

A Cross sectional survey was conducted among 560 male secondary school students in grades 10, 11 and 12 in Ajman by multistage stratified random sampling from three public high schools for males in the Emirate of Ajman UAE. There were approximately 400 students in each school, data was collected from students in grade ten, eleven and twelve, each school has approximately 5 divisions in each grade and there are approximately 25-27 students in each class, by simple random sampling four schools were selected, one school refused to participate. By stratified random sampling two divisions from each grade from each school were selected, consent form was distributed and collected on the following day. Data was collected from all students whose parents signed the consent forms and who were eligible for participation and were present in the class on the date of data collection.

Data were collected using a twenty nine item self administered questionnaire that was translated to Arabic. The questionnaire was based on the Global Youth Tobacco Survey (GYTS) questions and modifications were made to collect the information on dokha smoking. The questionnaire included the demographic profile of participants, questions on prevalence, dokha smoking pattern, risk factors and attitude toward smoking. Content validity was done by three experts involved in

tobacco research. In the present paper only the questions on prevalence of dokha smoking is presented.

Operational definitions:

Ever smokers (ES): Those who ever smoked any tobacco product, even one or two puffs. This was based on the question in GYTS questionnaire.¹²

Ever dokha smokers (EDS): Those who ever smoked dokha even one or two puffs.

Current dokha smokers (CDS): Those who smoked dokha on one or more days in the past 30 days. This was again based on the GYTS definition of current smoker¹²

The study was approved by the ethics and research committees of Gulf Medical University. Names were not included in the questionnaires to ensure anonymity and confidentiality. Permission was taken from the heads of the schools and ministry of education Ajman region. Data were entered in Microsoft excel and data were analyzed Using SPSS version 21.

RESULTS

Demographic profile: This cross sectional study was conducted among male secondary school students by stratified random sampling from three public schools in Ajman UAE. Data were collected from 583 subjects, 23 of questionnaires were discarded because of incomplete entry. For the analysis of the data, 560 questionnaires were used. Among the participants, majority of the students (30.5%) were 17 years old, only 39 (9%) were aged 19 and 20 years. Almost equal number of students from each grade was selected. (Table-1)

Table -1. Distribution of age, grade and nationality

Variable	Group	No	%
Age in years	15	94	16.8
	16	162	28.9
	17	171	30.5
	18 and above	133	14.8
Grade	10	176	31.4
	11	192	34.3
	12	192	34.3

Tobacco smoking habit: The prevalence of ever smokers (ES) was 39% and the prevalence of ever dokha smokers (EDS) was 36%. The current practice of dokha smoking (CDS) was observed in 24% of the students (Table -2).

Table -2. Distribution of ever users and current users

Type of smoking	Yes		No		Total
	No.	%	No.	%	
Ever smokers	218	38.9	342	61.1	560
Ever dokha smokers	203	36.3	357	63.7	560
Current dokha smokers	134	24.0	69	76.0	560

The study observed that about 39% were ever smokers. Among them 28% were cigarette smokers, 3% were shisha users and the remaining 8% were dokha users.

Specific Prevalence: The trend observed for the prevalence of ES, EDS and CDS was as age increases, the prevalence also increases. The highest prevalence was observed in above the age of 18 years in all groups of smoking habitués. Same trend was observed in the case of grades also. Compared to science discipline students, other discipline students were using tobacco more. The details are given in table -3.

Table -3. Age, Grade and discipline specific Prevalence of tobacco smoking

Variable	Group	Prevalence (%)						Total
		Ever smokers		Ever dokha smokers		Current dokha smokers		
		Yes	No	Yes	No	Yes	No	
Age in years	15	26.5	73.5	19.0	81.0	10.6	89.4	94
	16	32.0	68.0	29.0	71.0	19.1	80.9	162
	17	35.0	65.0	35.0	65.0	22.8	77.2	171
	>=18	59.3	40.7	58.6	41.4	40.6	59.4	133
Grade	10	31.0	69.0	28.4	71.6	20.4	79.6	176
	11	39.5	60.5	33.8	66.2	21.3	78.7	192
	12	45.0	55.0	45.8	54.2	29.6	70.4	192
Discipline	Science	32.7	67.3	26.2	73.8	16.3	83.7	122
	Others	46.9	53.1	46.0	54.0	29.7	70.3	262

As age increases the proportion of ever smoking and ever dokha smoking and current dokha smoking increases (Figure 1).

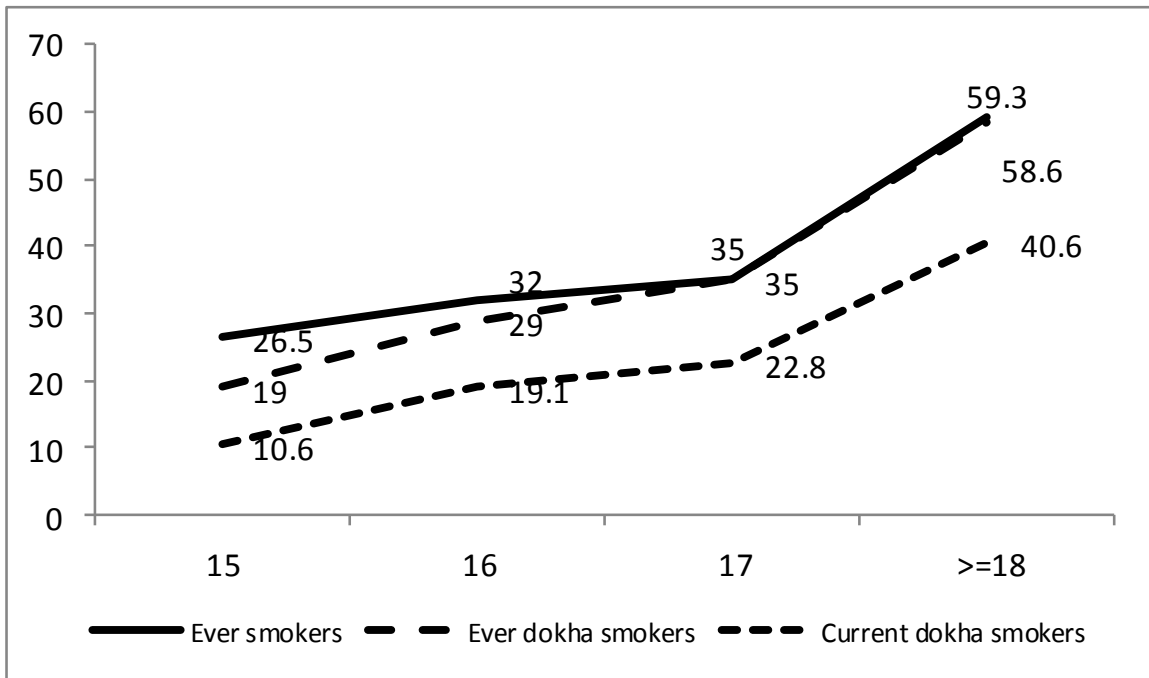


Figure 1. Prevalence of smoking habit over the years

Further questions were asked among the current dokha smokers about the use of dokha in combination with other types of smoking. The data showed that (40.5%) dokha smokers use shisha and cigarettes as well. Dokha smoke only was reported by 21.1%. The details are given in figure 2.

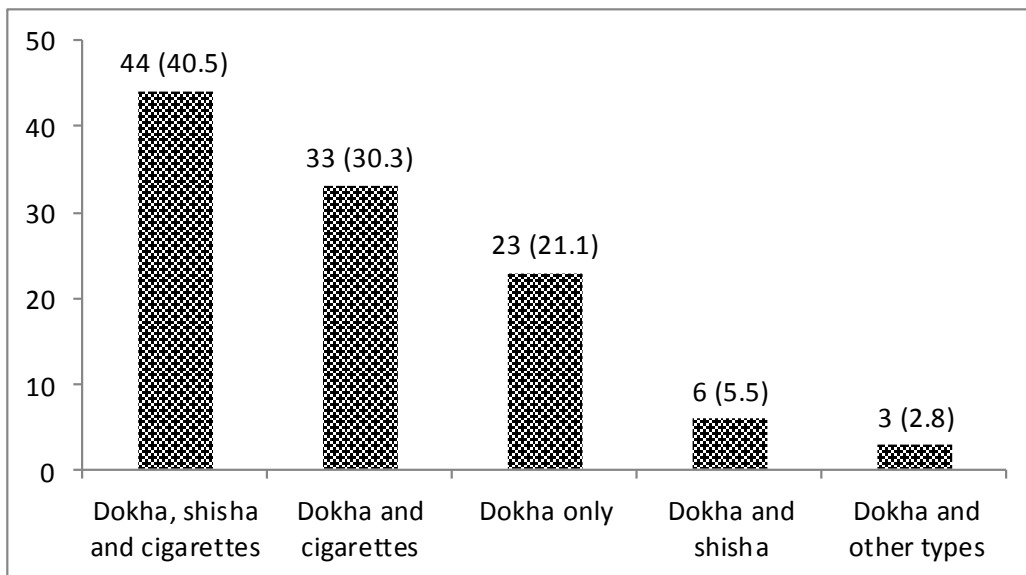


Figure 2: Pattern of dokha use along with other types of smoked tobacco

DISCUSSION

The study was conducted in public schools in Ajman where approximately 80% of the students are locals and the remaining 20% are other Arabs. The prevalence of ever smokers, ever dokha smokers and current dokha smokers is very high in the present study. There is not much difference between ever smokers and ever Dokha smokers indicating that Dokha is the emerging trend among youngsters in the UAE. A recent study among high school students from Dubai UAE indicated the popularity of dokha when compared to cigarettes where among the current users of tobacco dokha users were more than double the numbers of cigarette users⁹. Thus far most surveys carried out in the region have not reported the use of Dokha¹³. In UAE GYTS 2002 showed that the prevalence of ever smokers is 20.9% and current smokers are 29.7% among school boys ¹². The 2013 global report on tobacco epidemic indicated that 15.6% of the youth were current cigarette users and 21.3% were current tobacco users. this 21.3% may include dokha and Shisha users.

Prevalence of ever cigarette smoking among high school students ranged from 14.4% in Oman to 23.9% in Bahrain¹⁵, (21.7%) in secondary school students of Saudi Arabia¹⁶ and 29.6% in High-School students from Greece¹⁷. A study of 635 students in rural secondary schools in the Nile Delta region found that 11.5% of male students reported current smoking¹⁸. In our study the prevalence of ever smokers is 38.9% and ever dokha smokers is 24% which is much higher than most other studies on different forms of smoking among high school students. One of the reasons for the prevalence to be higher in our study when compared to GYTS data and other studies is that we included male secondary school students from grade 10 to 12, where as the GYTS included students from grade 7 to 10 of both genders.

In our study the prevalence of smoking increased with age among ever smokers, ever dokha smokers and current dokha smokers. Ever smokers almost doubled from age 15 (26.5%) to 18 years (59.3%), ever dokha smokers almost tripled from age 15 (19%) to 18 years (58.6%), and current dokha smokers also almost quadrupled from 15 (10.6%) to 18 years (40.6%). According to the WHO report on the global tobacco epidemic 2013 in UAE that current tobacco use is 21.3% among youth and 28.1% among adults¹⁴. A survey among high school boys in England also shows that the prevalence of regular smoking increases with age, from 0.5% of eleven year olds to 11% of fifteen year olds¹⁹. In Abu Dhabi data from the Weqaya screening program showed that the smoking rate of 18-20 years old is 16%, in 20-29 year olds is 27% and 30-39 year olds is 28%⁸.

In our study we found that the number of ever smokers, ever dokha smokers and current dokha smokers increased with increasing grades with almost half of the boys (45.8%) being ever dokha smokers and almost one third (28.4%) being current dokha smokers in grade 12. This trend is similar to the CDC analyzed data from 2000 to 2009 from the National Youth Tobacco Survey where 8.2% of middle school students and 23.9% of secondary school students were smokers²⁰. In grade 11, the students in UAE have the option to choose the science stream or other streams such as arts and commerce. On comparing science students with other students we found that science students had fewer ever smokers, ever dokha smokers and current smokers when compared to students who took other streams, this finding is in contrast to the findings of the study in Riyadh, Saudi Arabia 2011 that showed smoking to be significantly higher in the science students when compared to others²¹.

In our study we found that most of the dokha smokers smoke all 30 days (32.8%) while in Iraq 2013 they found that majority of the students (38%) smoked for 1 to 2 days in the last 30 days and only 19.6% smoke everyday²². A study done in Saudi Arabia 2007 showed that most of the students (52%) smoked for 1 to 2 days in the last 30 days and only 6% smoke every day, and most of them smoked more than 4 times a day 29.1% and 2.4% prefer to smoke more than 20 cigarettes a day²³ 24.6% of young hookah smokers in Pune India smoked every day²⁴. In the order of cost, Shisha is most expensive, followed by cigarettes, then Dokha. The low cost of Dokha may be a reason for the more frequent use of Dokha.

CONCLUSION

The alarming increase in the number of Dokha smokers among school students in both the current study, which included predominantly local students, and the Dubai study⁹ among predominantly expatriate students is a disturbing trend. Dokha smoking is not only a menace by itself but it also can serve as a gateway for other forms of smoking such as shisha and cigarettes. The present ban on cigarettes and shisha is not enough; there should be a ban on all tobacco products including Dokha.

Although the study was conducted in one of the smaller emirates of the United Arab Emirates, the results are valuable as more than 80% of the participants were UAE local students, we recommend a nationwide survey on dokha smoking to be conducted among school children of all nationalities. The study highlights the fact that dokha is an emerging alternate tobacco product which warrants urgent action targeting school students.

ACKNOWLEDGEMENTS

The authors would like to thank the Ministry of Education, Ajman region for granting the permission to conduct the study in the public schools of Ajman

CONFLICT OF INTEREST

"The authors declare that there are no conflicts of interest."

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