

## MINI-REVIEW

# Dokha: An Emerging Public Health Issue as a Form of Tobacco Smoking in the Middle East

Lisha Jenny John<sup>1</sup>, Jayakumary Muttappallymyalil<sup>2\*</sup>

### Abstract

**Background:** Tobacco use is one of the leading causes of preventable death across the world today and the smoking rates among men in the Arab world are amongst the highest in the world. Smoking of dokha, a traditional Arab tobacco is common in some of the Middle East countries such as the United Arab Emirates and Iran. This review focuses on the prevalence, pattern and health effects of dokha use in the Middle East. For this purpose an electronic search was performed in the following databases and websites: MEDLINE, EMBASE, Proquest and Google scholar up to December 2012. The search strategy was based on Internet search for the synonyms of dohka or midwakh. From the results of the review it emerged that younger people are the most common users of dokha. Hence effective outreach health education programs, targeting adolescents, especially school students before they take up the habit of smoking, may thus curb the emergence of the problem.

**Keywords:** Dokha - Middle-east - tobacco - midwak - prevalence - prevention

*Asian Pac J Cancer Prev*, 14 (12), 7065-7067

### Introduction

Tobacco use is one of the leading causes of preventable death across the world today, with a mortality rate of 6 million people every year. The mortality associated with tobacco use is predicted to increase to 8 million per year by 2030 (WHO, 2011). Tobacco is one of the major risk factors for chronic diseases including cardiovascular disease, stroke, chronic respiratory diseases and cancers (Freund et al., 1993; Doll et al., 2004).

Cigarette smoking is among the most common types of tobacco consumed worldwide. However, other modes of consumption of tobacco include waterpipe smoking (shisha, hookah), dokha/midwakh, chewing tobacco and sniffing tobacco, the practices varying with the regions of the world (WHO, 2011).

Tobacco use in the Middle East has been increasing over the past 50 years and the smoking rates among men in the Arab world are amongst the highest in the world, with an estimated prevalence of up to 77% (WHO, 2011). Smoking is uncommon among women in the Arab world (Mandil et al., 2010). Smoking of shisha (water-pipe) is particularly common in Middle East (Maziak and Ward, 2004; Al-Mohamed and Amin, 2010) and the use of dohka is prevalent in some of the Arab countries such as the United Arab Emirates and Iran (WHO, 2010; Akl et al., 2011).

The word 'dokha' or 'buzz' is derived from the Arabic phrase 'Laf Raas' which means dizziness and is a regional tobacco mix of leaves, bark and herbs. Dokha is available in different strengths and flavours. It is smoked

through a small smoking pipe called a midwakh. It was traditionally smoked by the bedouin and sailors in the UAE. The Midwakh bowl can be filled with 0.5 grams of dry tobacco (dokha) for each use. In general, dohka smokers would require two inhalations to burn the dry tobacco in the smoking pipe (midwakh). The prevalence and the health effects of dokha use have been documented in reports from the UAE (Nina Muslim, 2006; Shaikh et al., 2008; Jayakumary et al., 2010; Al-Houqani et al., 2012; Gulf news, 2012; Hajat et al., 2012). The WHO surveys (GSHS, GYTS and GTSS) carried out in the region have not reported the use of Dokha (WHO, 2002; 2009; 2010).

The dokha is available in variable strengths based on the effects produced, ranging from the mild (cold) to the strongest (extra hot). The 'dokha' variety providing the strongest 'buzz' is referred to as laf raas-the Arabic phrase for head spins. It is sold typically in small plastic pots that can last approximately a fortnight. The use of dokha is considered a popular trend among the adolescents, especially in the Middle East (CBS interactive, 2010).

The use of tobacco by the adolescents have been reported to affect the academic performance and influence their social life and health (Nakkash et al., 2011). This review focuses on the prevalence, pattern and health effects of dokha use in the Middle East.

### Literature Survey

The review described included all studies published in English language up to December 2012 from the Middle East countries, assessing dokha use, pattern of use and

<sup>1</sup>Department of Pharmacology, <sup>2</sup>Department of Community Medicine, Gulf Medical University, Ajman, UAE \*For correspondence: [researchdivision2@gmail.com](mailto:researchdivision2@gmail.com)

associated health related effects.

#### *Eligibility criteria*

**Inclusion criteria/Exclusion criteria were:** *i)* All types of studies and reports on dokha use were included; *ii)* Assessment of the prevalence of use of dokha/midwakh; *iii)* Prevalence of dokha/midwakh smoking reported separately from the prevalence of other forms of smoking; *iv)* Assessment of effects of dokha on the body; *v)* The target population is either the general population or a specific population of interest such as high school students or university students; *vi)* Studies published from the Middle Eastern region; and *vii)* Studies in English language.

#### *Data source and search strategies*

An electronic search was performed in the following databases and websites: MEDLINE, EMBASE, Proquest, Google scholar up to December 2012. The search strategy was based on Internet search for the synonyms of dokha/midwakh, prevalence, pattern of use, reasons for use, and acute effects on organ systems, and Middle East. Combinations of the key words listed were used to filter the search.

#### *Selection process and data extraction*

The title and abstract of citations identified for potential eligibility were independently screened and the full texts of citations were screened and judged for eligibility. Two reviewers independently abstracted the data and resolved disagreements by discussion.

## **Prevalence**

Twelve relevant studies from across the Middle Eastern countries were reviewed for prevalence pattern of dokha use, and acute effects of dokha use in the Middle East.

There were two reports on the prevalence of dokha use from the UAE: Jayakumary et al. (2010) and Al-Houqani et al. (2012). Al-Houqani et al. (2012) reported that the overall prevalence rate of dokha use of 1.66%. Jayakumary et al. (2010) reported 11.5% of the university students had smoked dokha at some stage in the past.

Looking at the gender-based prevalence, Al-Houqani et al. (2012) reported 3.6% among males and Jayakumary et al. (2010) reported 30.4% of the males were dokha users. This finding is expected as more men than the females are commonly involved in smoking tobacco. Additionally, it is related to the cultural settings of the Middle East region.

According to Al-Houqani M et al, the mean age of individuals smoking dokha was 30 (29.6-30.4) years and the mean age of starting dokha use was 20.9 (6.7) years. The mean age of the participants of the two studies from UAE reporting dokha use and its health effects were 19.6 (1.8) years and 21.29 (2.25) years (Jayakumary et al., 2010; Shaikh et al., 2008). Jayakumary et al reported that 11.5% of students below the age of 18 years smoked dokha. These findings suggest that the dokha users are the younger generation, probably due to the popular trend. This habit of dokha use starting early in life may subsequently become a lifelong habit and may also involve

the users in other substance use practices. There are initiatives that had been undertaken in the region to ban minors getting access to tobacco products, and emphasis need to be laid on all forms of tobacco including dokha. These studies provide evidence on the importance of implementing anti-tobacco strategies and measures, with special emphasis on primary prevention of smoking of dokha among adolescents, and the adolescents need to be educated of the health effects of dokha smoking.

Dokha is preferred among the youth due to the availability of dokha in a variety of flavors, in different pipe styles of the midwakh (smoking pipe) and at lower cost in comparison to cigarettes. The most common reason for use of dokha among university students as reported by Shaikh et al. (2008) were strong sensation of light-headedness, lack of odor, the small dose required to satisfy nicotine craving, the absence of stain on lips, low cost and view that it was less harmful than other forms of tobacco. These 'benefits' seem attractive to youth with limited access to money and more concerned with the appearance, associated style quotient and the current trend.

Al-Houqani et al. (2012) observed dokha as the second most common form of tobacco smoking among the Emirati population studied, with an average use of dokha of 12 times/day and Jayakumary et al. reported an average use of 7-10 per day in 16.4% of the dokha users. Another concern with this slowly emerging form of tobacco use is the likelihood of the spread of this form of tobacco smoking to other countries in the region and other parts of the world. An unpublished survey among school students have shown that the dokha use among the expatriate students from European, British and other western nationalities (Gulf news, 2012). A similar rapid spread of use of water pipes in the Gulf region has been documented in previous literature (Akl et al., 2011; Nakkash et al., 2011).

## **Physiological Effects**

Shaikh et al observed that the acute effects of smoking dokha on the cardio-respiratory systems included significant increase in systolic blood pressure, heart rate and respiratory rate similar to those produced by the other forms of smoking. The main constituent alkaloid in all forms of tobacco including dokha is nicotine, which is responsible for the addictive effect. It stimulates cardiac contractility and constriction of the blood vessels, causing an acute temporary rise of heart rate and arterial blood pressure after a smoking session. The results of these reports add to the evidence that dokha use is not free from harmful effects on the various organ systems as incorrectly perceived by most users. The lack of awareness of the nicotine content and the associated effects of dokha use could be the reason underlying the preference of dokha among the adolescents (Al- Damegh et al., 2004). Hence, the anti-smoking/ anti-tobacco campaigns must address the ill effects of this form of smoking as well.

## **Conclusions**

From the observations of the review, the younger people were noted to be the most common users of dokha.

Hence effective outreach health education programs, targeting adolescents especially the school students before they take up the habit of smoking may curb the problem spreading. Active involvement of the teachers and parents in imparting awareness among their children of the ill effects can help them build their future free of substance use. The increasing use of internet among the youth could effectively be harnessed as a source of information regarding the negative effects of all forms of tobacco including dokha.

## Acknowledgements

The authors gratefully acknowledge Dr. Gamini Premadasa, Director CME and CPD, Medical Education Unit, Gulf Medical University for copyediting the manuscript.

## References

- Al-Damegh SA, Saleh MA, Al-Alfi MA, Al-Hoqail IA (2004). Cigarette smoking behavior among male secondary school students in the Central region of Saudi Arabia. *Saudi Med J*, **25**, 215-9.
- Al-Houqani M, Ali R, Hajat C (2012). Tobacco smoking using midwakh is an emerging health problem - evidence from a large cross-sectional survey in the United Arab Emirates. *PLoS ONE*, **7**, 39189.
- Al- Mohamed HI, Amin TT (2010). Pattern and prevalence of smoking among students at King Faisal University, Al Hassa, Saudi Arabia. *East Mediterr Hlth J*, **16**, 56-64.
- Akl EA, Gunukula SK, Aleem S, et al (2011). The prevalence of waterpipe tobacco smoking among the general and specific populations: a systematic review. *BMC Public Health*, **11**, 244.
- CBS Interactive [Online]. Midwakh: (2010) update. Available from: URL: <http://www.search.com/reference/Midwakh>. Accessed on 3rd October 2012.
- Doll R, Peto R, Boreham J, Sutherland I (2004). Mortality in relation to smoking:50 years' observations on male British doctors. *BMJ*, **328**, 1519.
- Freund KM, Belanger AJ, D'Agostino RB, Kannel WB (1993). The health risks of smoking. The Framingham Study: 34 years of follow-up. *Ann Epidemiol*, **3**, 417-24.
- Hajat C, Harrison O, Al Siksek Z (2012). Weqaya: a population-wide cardiovascular screening program in Abu Dhabi, United Arab Emirates. *Am J Public Health*, **102**, 909-14.
- Gulf News, June (24, 2012) [Online]. Dubai's teenagers take to 'dokha' -. Available from: URL: <http://gulfnews.com/news/gulf/uae/education/dubai-s-teenagers-take-to-dokha-1.1039067>. Accessed on 21<sup>st</sup> December 2012.
- Jayakumary M, Jayadevan S, Ranade AV, Mathew E, (2010). Prevalence and pattern of dokha use among medical and allied health students in Ajman, United Arab Emirates. *Asian Pac J Cancer Prev*, **11**, 1547-9.
- Mandil A, Bin Saeed A, Ahmad S, et al (2010). Smoking among university students: a gender analysis. *J Infect Public Health*, **3**, 179-87.
- MPOWER package, (2011). WHO report on the global tobacco epidemic. Available from: URL: [http://www.who.int/tobacco/global\\_report/2011/en/index.html](http://www.who.int/tobacco/global_report/2011/en/index.html). Accessed on 8<sup>th</sup> August 2012.
- Maziak W, Ward KD, (2004). Tobacco smoking using a waterpipe: A re-emerging strain in a global epidemic. *Tob Control* **12**, 327-33.
- Nakkash RT, Khalil J, Afifi RA (2011). The rise in narghile (shisha, hookah) waterpipe tobacco smoking: A qualitative study of perceptions of smokers and non smokers. *BMC Public Health*, **11**, 315.
- Nina Muslim. Gulf news: Teenagers resort to Arabic pipe for a high. Teenagers resort to Arabic pipe for a high. 2006. Available from: URL: <http://gulfnews.com/news/gulf/uae/general/teenagers-resort-to-arabic-pipe-for-a-high-1.235759>. Accessed 20<sup>th</sup> December 2012.
- Shaikh RB, Vijayaraghavan N, Sulaiman AS, et al (2008). The acute effects of Waterpipe smoking on the cardiovascular and respiratory systems. *J Prev Med Hyg*, **49**, 101-7.
- WHO Tobacco Free Initiative (TFI) (2002) Global Youth Tobacco Survey (GYTS). Available from: URL: <http://www.who.int/tobacco/surveillance/gyts/en/>. Accessed on 20<sup>th</sup> December 2012.
- WHO Tobacco Free Initiative (TFI) (2009) GATS (Global Adult Tobacco Survey). Available from: URL: <http://www.who.int/tobacco/surveillance/gats/en/index.html>. Accessed on 20<sup>th</sup> December 2012.
- WHO [Online]. Fact sheet 2010-Available from: URL: <http://www.who.int/mediacentre/factsheets/fs339/en/index.html>. Accessed on 3<sup>rd</sup> October 2012.
- WHO. Global school-based student health survey (GSHS). Global school based student health survey (GSHS). 2010. Available from: URL; <http://www.who.int/chp/gshs/en/>. Accessed on 20<sup>th</sup> December 2012.