

**Letter from Waterpipe Researcher Dr. Fadi Hammal**

**October 16, 2019**

**Attn: Standing Policy Committee on Community and Protective Services**

**RE: Cultural Practices and Health Impacts of Waterpipe**

*Background*

In the early 1990s, Waterpipe (WP) started to be more visible and its use was spreading to new population. This trend was reflected in a paper published in 2004 by *Rastam et al.*<sup>i</sup>. The paper revealed that men and women from different age cohorts started smoking WP in early 90s and attributed this increase in smoking initiation to the introduction of flavoured tobacco which happened in the late 80s. It seems that history has repeated again, adding flavour to tobacco to make it more appealing to youth and women.

*Waterpipe as a Cultural Practice*

WP marketing strategies benefited from the introduction of the internet and social media platforms, and from changes that were happening in Middle Eastern (ME) societies to promote WP as an expression of refusal of the traditional rules, liberalization, and female empowerment.<sup>ii</sup> By contrast, in western multi-cultural societies marketing strategies promoted WP smoking as a cultural practice that is deeply rooted in the collective consciousness of ME societies. These marketing strategies played upon the western multi-cultural societies' respect for cultural practices and the careful consideration of such practices when formulating new policy or regulation. **These marketing strategies led to a false perception, among many in the western societies including Canada, that WP smoking has significant meanings and values in ME cultures system of shared beliefs, values, and customs.**

Fortunately, evidence does not support this perception. WP users from different cultural backgrounds gave similar explanations for their motivations for initiation including, not cultural practice, but access, flavor, trend, and curiosity.<sup>iii,iv</sup> Evidence has revealed that this behavior was linked by some to impropriety and indignity especially among women, and it was described as a shameful and disrespectful to the society.<sup>ii,v</sup> Those terms were voiced by a participant, in a qualitative study conducted in Calgary, that has cultural ties to that region indicating that her parents were embarrassed when her relatives in the country of origin knew about her smoking the WP.<sup>vi</sup>

In a study conducted in USA among students who smoke WP and that have cultural ties to ME countries, only 4% of participants described WP smoking as an important part of their culture.<sup>vii</sup>

In another study conducted in Calgary, community workers who have cultural ties to countries in ME did not think that WP spread has any connection with cultural practice.<sup>viii</sup> Furthermore, religion which is a

factor that plays an important role in the cultural identity, especially in that part of the world, doesn't seem to support the use of WP. Participants in a qualitative study from ME saw the increase in the WP prevalence as a consequence of decreasing religious beliefs.<sup>v</sup> A study conducted in rural Egypt assessing the impact of a Fatwa (religious ruling) on smoking that was issued by the grand Mufti of Egypt found that of WP cafés patrons, 81% thought that smoking the WP is a sin i.e., "Haram".<sup>ix</sup> This attitude motivated World Health Organization (WHO-EMRO) to emphasize its role in encouraging tobacco users to stop.<sup>x,xi</sup>

**The higher tendency among some ethnic groups in North America to smoke WP does not necessarily reflect any cultural significance of this practice in their system of shared beliefs, values, and customs that is transmitted from generation to generation. Instead, it could be a result of 'cultural predisposition' due to normalization of this behavior subsequent to the endemic increase in the prevalence of this practice in their countries of origin.** This expression of WP users' commitment to their perceived hallmarks (or identifiers?) of ethnicity or their ethnic pride<sup>xii</sup> may be a mechanism of retention of ethnic identity to cope with impact of the process of acculturation in the new environment.<sup>xiii,xiv</sup>

#### *Health Effects of Waterpipe*

**The argument about water filtering effect and the herbal vs tobacco or the charcoal quality still being widely used without any scientific merit or support. *Shihadeh A.* revealed more than 15 years ago in a laboratory study that water only filters the nicotine without any significant impact on the other harmful chemicals.<sup>xv</sup> Several laboratory studies showed that switching to herbal products has no significant impact on harmful content of both mainstream and sidestream smoke.<sup>xvi,xvii</sup> Studies on the air quality in WP smoking venues in Canada and USA (where only herbal products were supposed to be smoked) showed that, in addition to the existence of nicotine vapour in some of those venues, the air quality was far from been healthy and represents public health risk for WP smokers and non-smokers, and occupational hazards for employees.<sup>xvi,xviii,xix,xx,xxi,xxii,xxiii</sup>**

Although some newer arguments tried to link those risks with the ignition sources promoting electronic heating sources as a healthy alternative, recently published studies does not seem to agree with this. A study conducted in Germany on electronically heated steam stone in WP showed that electronic WP released various harmful substances that significantly impact the indoor air quality.<sup>xxiv</sup> In a study conducted in USA and recently published studying the impact of waterpipe smoke on alveolar cells, showed that electronically-heated shisha smoke caused significant alveolar cell damage and death. The author concluded that **"neither tobacco nor charcoal are needed for those cytotoxic effects to occur"**.<sup>xxv</sup>

The increased interest in and knowledge about WP and its health effects led to a ban on WP smoking in public places in some countries, such as Syria, Lebanon and Turkey.<sup>xxvi,xxvii,xxviii</sup> However, the public health response in Canada has been almost absent. **From a public health perspective, allowing a device that within 45 minutes of a smoking session, can produce about (50 L) of smoke, with poorly characterized**

**chemical constituents may be very problematic and potentially illegal in relation to clean air and occupational health and safety legislation.**

- 
- <sup>i</sup> Rastam S1, Ward KD, Eissenberg T, Maziak W. Estimating the beginning of the waterpipe epidemic in Syria. *BMC Public Health*. 2004 Aug 4;4:32.
- <sup>ii</sup> Khalil J, Afifi R, Fouad FM, Hammal F, Jarallah Y, Mohamed M, Nakkash R. Women and waterpipe tobacco smoking in the eastern mediterranean region: allure or offensiveness. *Women Health*. 2013;53(1):100-16. doi: 10.1080/03630242.2012.753978.
- <sup>iii</sup> Akl EEA, Jawad M, Lam WWY, et al. Motives, beliefs and attitudes towards waterpipe tobacco smoking: a systematic review. *Harm Reduct ...* 2013;10:12. doi:10.1186/1477-7517-10-12
- <sup>iv</sup> Hammal F, Mock J, Ward KD, et al. A pleasure among friends: how narghile (waterpipe) smoking differs from cigarette smoking in Syria. *Tob Control* 2008;17:e3. doi:10.1136/tc.2007.020529
- <sup>v</sup> Afifi R, Khalil J, Fouad F, et al. Social norms and attitudes linked to waterpipe use in the Eastern Mediterranean Region. *Soc Sci Med*. 2013 Dec;98:125-34. doi: 10.1016/j.socscimed.2013.09.007.
- <sup>vi</sup> Hammal F., T. Cameron Wild, Candace Nykiforuk, Khadija Abdullahi, Dawit Mussie, Barry A. Finegan. Waterpipe (Hookah) Smoking Among Youth and Women in Canada is New, not Traditional. *Nicotine & Tobacco Research*, 2015, 1–6 doi:10.1093/ntr/ntv152
- <sup>vii</sup> Arfken CL, et al Pilot study of Waterpipe tobacco Smoking Among US Muslim Collage Students *J Relig Health*. 2015. 54:1543-54
- <sup>viii</sup> Hammal F., T. Cameron Wild, Barry A. Finegan. Knowledge About the Waterpipe (Hookah), a Qualitative Assessment Among Community Workers in a Major Urban Center in Canada. *J Community Health*. 2015. DOI 10.1007/s10900-015-0143-9
- <sup>ix</sup> Radwan GN, Israel E, El-Setouhy M, et al. Impact of religious rulings (Fatwa) on smoking. *J Egypt Soc Parasitol*. 2003 Dec;33(3 Suppl):1087-101
- <sup>x</sup> El Awa F. Middle East: religion against tobacco. *Tob Control* 2003;12(3):249-50.
- <sup>xi</sup> El Awa F. The role of religion in tobacco control interventions. *Bull World Health Organ*. 2004 Dec;82(12):894.
- <sup>xii</sup> Kong G, Camenga D, Cavallo D, et al. The role of ethnic pride and parental disapproval of smoking on smoking behaviors among minority and white adolescents in a suburban high school. *Am J Addict* 2012;21:424–34. doi:10.1111/j.1521-0391.2012.00266.x
- <sup>xiii</sup> Asbridge M, Tanner J, Wortley S. Ethno-specific patterns of adolescent tobacco use and the mediating role of acculturation, peer smoking, and sibling smoking. *Addiction* 2005;100:1340–51. doi:10.1111/j.1360-0443.2005.01165.x
- <sup>xiv</sup> Nguyen H, Rawana JS, Flora DB. Risk and protective predictors of trajectories of depressive symptoms among adolescents from immigrant backgrounds. *J Youth Adolesc* 2011;40:1544–58. doi:10.1007/s10964-011-9636-8
- <sup>xv</sup> Shihadeh A. Investigation of mainstream smoke aerosol of the argileh waterpipe Food and Chemical toxicology 2003
- <sup>xvi</sup> Hammal F, Chappell A, Wild TC, Kindzierski W, Shihadeh A, Vanderhoek A, Huynh CK, Plateel G, Finegan BA. 'Herbal' but potentially hazardous: an analysis of the constituents and smoke emissions of tobacco-free waterpipe products and the air quality in the cafés where they are served. *Tob Control*. 2015 May;24(3):290-7. doi: 10.1136/tobaccocontrol-2013-051169. Epub 2013 Oct 15.
- <sup>xvii</sup> Shihadeh A, Salman R, Jaroudi E, et al. Does switching to a tobacco-free waterpipe product reduce toxicant intake? A crossover study comparing CO, NO, PAH, volatile aldehydes, "tar" and nicotine yields. *Food Chem Toxicol*. 2012;50(5):1494-8. doi: 10.1016/j.fct.2012.02.041.
- <sup>xviii</sup> Zhang B, Haji F, Kaufman P, Muir S, Ferrence R. 'Enter at your own risk': a multimethod study of air quality and biological measures in Canadian waterpipe cafes. *Tob Control*. 2015 Mar;24(2):175-81. doi: 10.1136/tobaccocontrol-2013-051180. Epub 2013 Oct 25.
- <sup>xix</sup> Cobb CO, Vansickel AR, Blank MD, Jentink K, Travers MJ, Eissenberg T. Indoor air quality in Virginia waterpipe cafes. *Tob Control*. 2013 Sep;22(5):338-43. doi: 10.1136/tobaccocontrol-2011-050350. Epub 2012 Mar 24.
- <sup>xx</sup> Travers MJ, Kulak JA, Vogl L. Waterpipe cafés are hazardous to your health: Determination of a waterpipe specific calibration factor. *Int J Hyg Environ Health*. 2018 Jan;221(1):48-53. doi: 10.1016/j.ijheh.2017.10.002. Epub 2017 Oct 12.
- <sup>xxi</sup> Zhou S, Behrooz L, Weitzman M, Pan G, Vilcassim R, Mirowsky JE, Breysee P, Rule A, Gordon T. Secondhand hookah smoke: an occupational hazard for hookah bar employees. *Tob Control*. 2017 Jan;26(1):40-45. doi: 10.1136/tobaccocontrol-2015-052505. Epub 2016 Jan 25.
- <sup>xxii</sup> Kumar SR, Davies S, Weitzman M, Sherman S A review of air quality, biological indicators and health effects of second-hand waterpipe smoke exposure. *Tob Control*. 2015 Mar;24 Suppl 1:i54-i59. doi: 10.1136/tobaccocontrol-2014-052038. Epub 2014 Dec 5. Review

- 
- <sup>xxiii</sup> Bekir Kaplan, Thomas Sussan, Ana Rule, Katherine Moon, Maria Grau-Perez, Pablo Olmedo, Rui Chen, Asli Carkoglu, Vladimir Levshin, Lanqing Wang, Clifford Watson, Benjamin Blount, Antonia M. Calafat, Jeffery Jarrett, Kathleen Caldwell, Yuesong Wang, Patrick Breyse, Paul Strickland, Joanna Cohen, Shyam Biswal, Ana Navas-Acien. Waterpipe tobacco smoke: Characterization of toxicants and exposure biomarkers in a cross-sectional study of waterpipe employees. *Environment International* 127 (2019) 495–502
- <sup>xxiv</sup> Schober W, Matzen W, Szendrei K, Heitmann D, Schettgen T, Fromme H. [Electronic Shisha waterpipes: a new source of indoor air pollutants]. *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz*. 2017 Oct;60(10):1092-1101. doi: 10.1007/s00103-017-2607-9. German.
- <sup>xxv</sup> Karen Bernda, David DeGroot, Hannah Stadler, Sarah Coats, Dylan Carmack, Ronnae Mailig, Samuel Lidsky, Cindy Hauser. Contributions of charcoal, tobacco, and syrup to the toxicity and particle distribution of waterpipe tobacco smoke. *Toxicology Letters* 313 (2019) 60–65
- <sup>xxvi</sup> BBC. Syria smoking ban enters into force. 2010; Available at: [http://news.bbc.co.uk/2/hi/middle\\_east/8634411.stm](http://news.bbc.co.uk/2/hi/middle_east/8634411.stm)  
Accessed OCT 2019.
- <sup>xxvii</sup> BBC. Lebanon smoking ban provokes protests. 2012; Available at: <http://www.bbc.co.uk/news/world-middle-east-19470425>  
Accessed OCT 2019.
- <sup>xxviii</sup> DOTWNews.com. Turkey bans public shisha smoking. <http://www.dotwnews.com/focus/turkey-bans-public-shisha-smoking>  
Accessed OCT 2019.