



Published in final edited form as:

Addiction. 2016 May ; 111(5): 937–938. doi:10.1111/add.13316.

Public Health Implications of Waterpipe Tobacco Use in the U.S. Warrant Initial Steps Toward Assessing Dependence

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Dear Editor

We thank Dr. Myers and colleagues for their comments on our article. In their Letter to the Editor, the authors had 3 major concerns we wish to address.

First, the authors stated that “only 5.1% of the sample studied by Sidani and colleagues smoked at least once per month.” However, we clearly indicated on page 7 and in Table 4 that 42.3% of the study sample used for analysis reported current (past 30-day) use.¹ We stated that the sample for this study was the 436 past-year waterpipe (WP) smokers, not the entire population of 3254. We believe that 42.3% is a sufficient proportion with which to analyze the association between our scale and current WP use.

Second, the authors were concerned that the item, “*The last time you smoked hookah, how soon after waking up in the morning did you smoke your first bowl of hookah?*” did “not have a sound rationale for a predominantly intermittent tobacco use method that requires time to set up and smoke.” However, as we stated in Table 3, we dichotomized responses to

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Conflicts of Interest: Author S.S. has provided consulting services on tobacco harm minimization (including nicotine replacement therapy and digital vapor products) to Nicovum USA, RJ Reynolds Vapor Company and RAI Services Company, all subsidiaries of Reynolds American Inc. Author S.S. has also consulted to GlaxoSmithKline Consumer Healthcare on smoking cessation and NJOY on electronic cigarettes. Author S.S. also owns an interest in intellectual property for a novel nicotine medication, which has been optioned for development by Nicovum USA. The other authors have no conflicts of interest to disclose.

this item between those who did and did not smoke within 6 hours of awakening, which would not be affected by any set-up time required. The rationale for this item was not to capture forced abstinence overnight, but rather to capture a less normative WP smoking pattern of smoking before evening social time. While most young adults ages 18–30 may use WP smoking as an evening social activity,^{2,3} use before 6 hours after awakening may indicate movement of WP smoking into the afternoon and thus a move away from more extrinsic social factors towards more intrinsic dependence. This is analogous to what we have observed among non-daily cigarette smokers, who also use tobacco intermittently, and do not display the need for constant nicotine dosing that is seen in daily smokers.⁴ Even among non-daily smokers, time to first cigarette of the day appears to mark some level of dependence, and dependence measures designed for daily smokers appear to be applicable.⁵

Finally, the authors stated that our approach fails to develop WP-specific dependence measures. However, the item described above is an example of one that we specifically adapted to conform to the use behaviors and patterns specific to WP smoking. In particular, we selected the cutoff of 6 hours based on observations from our recent qualitative study of WP establishments, in which we noted the specific ritualistic behaviors and patterns of WP smokers.⁶

We also believe that assessment of dependence must recognize common aspects of dependence, not only across different kinds of tobacco use, but even across different drugs. Indeed, the DSM and WHO/ICD diagnostic systems use the same criteria across drugs.^{7,8} A balance must be struck between recognizing features specific to a particular use modality and keeping the linkage to the core aspects of drug dependence that are shared across drugs and patterns of use.

Therefore, in the development of our scale, we adapted items from both the FTCD, a general nicotine dependence measure, and the LWDS, a WP-specific dependence measure developed in a WP-endemic region.^{9,10} The LWDS was developed with a combination of measures adapted from the FTCD, the DSM-IV, and author-generated items deemed specific to WP.¹⁰ The LWDS and its final version, the LWDS-11, is considered to be an accepted measure of WP dependence in populations from the Eastern Mediterranean Region, and is cited frequently, including by authors of this Letter to the Editor.^{11,12}

In summary, we agree with the authors that it will be valuable to continue to develop and validate items that are specific to WP use. Considering the lack of WP-specific dependence measures in the U.S. and the tremendous public health implications of WP in the U.S. young adult population,^{13–15} we believe that our scale is an important starting point. We look forward to working with other researchers in honing this scale over time.

References

1. Sidani JE, Shensa A, Shiffman S, Switzer GE, Primack BA. Behavioral associations with waterpipe tobacco smoking dependence among US young adults. *Addiction*. 2015 Epub ahead of print.
2. Jawad M, Jawad S, Mehdi A, Sardar A, Jawad AM, Hamilton FL. A qualitative analysis among regular waterpipe tobacco smokers in London universities. *International Journal of Tuberculosis and Lung Disease*. 2013; 17:1364–1369. [PubMed: 24025391]

3. Rezk-Hanna M, Macabasco-O'Connell A, Woo M. Hookah smoking among young adults in southern California. *Nursing Research*. 2014; 63:300–306. [PubMed: 24977727]
4. Shiffman S, Tindle H, Li X, Scholl S, Dunbar M, Mitchell-Miland C. Characteristics and smoking patterns of intermittent smokers. *Experimental and Clinical Psychopharmacology*. 2012; 20:264–277. [PubMed: 22390208]
5. Shiffman S, Ferguson SG, Dunbar MS, Scholl SM. Tobacco Dependence Among Intermittent Smokers. *Nicotine & Tobacco Research*. 2012; 14:1372–1381. [PubMed: 22529224]
6. Carroll MV, Chang J, Sidani JE, Barnett TE, Soule E, Balbach E, Primack BA. Reigniting tobacco ritual: Waterpipe tobacco establishment culture in the United States. *Nicotine & Tobacco Research*. 2014; 16:1549–1558. [PubMed: 24972889]
7. American Psychiatric Association. *Diagnosis and statistical manual of mental disorders: DSM-IV-TR*. 4th. Washington, D.C.: 2000.
8. World Health Organization. *International Statistical Classification of Diseases and Related Health Problems*. 10th. Washington, D.C.: World Health Organization; 1992.
9. Fagerström K. Determinants of tobacco use and renaming the FTND to the Fagerstrom Test for Cigarette Dependence. *Nicotine & Tobacco Research*. 2012; 14:75–78. [PubMed: 22025545]
10. Salameh P, Waked M, Aoun Z. Waterpipe smoking: Construction and validation of the Lebanon Waterpipe Dependence Scale (LWDS-11). *Nicotine & Tobacco Research*. 2008; 10:149–158. [PubMed: 18188755]
11. Maziak W, Rastam S, Shihadeh A, Bazzi A, Ibrahim I, Zaatari GS, Ward KD, Eissenberg TE. Nicotine exposure in daily waterpipe smokers and its relation to puff topography. *Addictive Behaviors*. 2011; 36:397–399. [PubMed: 21185126]
12. Maziak W, Rastam S, Ibrahim I, Ward KD, Shihadeh A, Eissenberg TE. CO exposure, puff topography, and subjective effects in waterpipe tobacco smokers. *Nicotine & Tobacco Research*. 2009; 11:806–811. [PubMed: 19420278]
13. Primack BA, Shensa A, Kim KH, Carroll MV, Hoban MT, Leino EV, Eissenberg TE, Dachille KH, Fine MJ. Waterpipe smoking among U.S. university students. *Nicotine & Tobacco Research*. 2013; 15:29–35. [PubMed: 22641433]
14. Primack BA, Freedman-Doan P, Sidani JE, Rosen D, Shensa A, James AE, Wallace J. Sustained waterpipe tobacco smoking and trends over time. *American Journal of Preventive Medicine*. 2015; 49:859–867. [PubMed: 26385163]
15. Cobb C, Ward KD, Maziak W, Shihadeh A, Eissenberg TE. Waterpipe tobacco smoking: an emerging health crisis in the United States. *American Journal of Health Behavior*. 2010; 34:275–285. [PubMed: 20001185]