



Editorial

Shishas: another way of tobacco smoking. . . Another source of exposure to toxic compounds[☆]



Cachimbas: otra forma de fumar tabaco. . . Otra fuente de exposición a compuestos tóxicos

Waterpipes, also known as shishas, hookahs, or narghiles, are devices for the shared smoking of tobacco, herbs, or other substances impregnated with molasses, which are placed in a bowl where they are lit with small coals. The smoke passes through a vertical stem to a water container where it is cooled and humidified, before it is drawn from a distance through the mouthpiece of one or more hoses.¹

Waterpipes are mainly used with tobacco and there is a belief that they are healthier when they do not contain it. However, with the exception of nicotine, smoking waterpipes without tobacco has been shown to generate the same toxic compounds as when used with tobacco, in similar or even higher doses.¹ In addition to carbon monoxide, burning tobacco-free herbs generates carcinogenic substances such as tar, polycyclic aromatic hydrocarbons, fine particles, and aldehydes, while burning molasses generates furanic compounds, including some tumor promoters that contribute to increased metastasis in lung cancer.^{1–3} Toxic trace metals and other carcinogens have also been found in the composition of herbal products, also in excess of those found in cigarettes.³

Waterpipes are traditionally used in the Middle East and in some African countries; however, in recent years their use has spread in Europe.⁴ In Spain, there has been an increase in the prevalence of young people who have tried waterpipes at least once in a lifetime, from 6.2% in 2009 to 10.8% in 2017.⁴ In the university population, 10.3% of male students and 9.9% of female students smoked them at least occasionally in 2015–2016,⁵ while in 2018–2019, these figures had risen to 22.4% and 17.4%, respectively.⁶ Sharing devices, long smoking sessions, and the false belief that they are harmless may be some of the factors that have helped increase their use among young people.

The growing popularity of waterpipes raises public health concerns for a variety of reasons. First, although the mouthpieces, and sometimes the hoses, are supplied individually, they are often shared among different users and therefore pose a risk of infectious disease transmission, particularly if they are not changed or disinfected between sessions. All other components remain unchanged and are reused for other customers. Attention has been drawn to this unhygienic use and to the potential transfer of a large

amount of water droplets and saliva in exhaled smoke, particularly in the context of the current COVID-19 pandemic,⁷ and some health guidelines have been recommended, such as promoting individual use and implementing specific measures for the sanitization of reusable components, although calls have been made to discourage waterpipe use altogether.⁸

Another area of concern is that tobacco smoked in waterpipes contains nicotine, which creates addiction and also favors the initiation and consolidation of tobacco use in any of its forms. Furthermore, the smoke from waterpipes accumulates wherever they are used, passively exposing workers and customers to various toxic substances emitted by burning not only tobacco, herbs and molasses, but also the coals used in the process; the latter contribute to high levels of carbon monoxide, which can even cause acute poisoning,⁹ and polycyclic aromatic hydrocarbons, some of which are carcinogenic.^{10,11}

The smoke generated by waterpipes is therefore an important source of pollution wherever they are used. Concentrations of fine particles in premises where only waterpipes are smoked are higher than those found in premises where only cigarettes are smoked,¹² even when they are used without tobacco.³ In Spain, the extent of this exposure in a metropolitan city such as Barcelona has been investigated by quantifying air nicotine (a specific marker of tobacco exposure) and fine particles (PM_{2.5}) in 20 premises where waterpipes were used.¹³ The median nicotine concentration measured in 30 min was 1.15 µg/m³, with a maximum level of 8.16 µg/m³, while the median concentration of PM_{2.5} was 230.50 µg/m³, with a maximum level of 1758 µg/m³. These concentrations were significantly higher than those recorded in smoke-free sites: only 0.03 µg/m³ and 10.00 µg/m³, respectively. Concentrations of these markers were significantly higher in premises bigger than 100 m², located in tourist areas, in which more than 15 waterpipes were in use, with more than 8 waterpipes per 100 m² and up to 2 users per pipe. These results are significant, because the tobacco legislation in force in Spain, as in other countries, does not explicitly mention tobacco smoked in waterpipes, highlighting the legal vacuum in these premises, where not only waterpipes are used with tobacco, but conventional cigarette consumption is also tolerated, as observed in the same study.¹³ It should be noted that, as with other forms of tobacco smoking, both the use of waterpipes and passive exposure to their toxic compounds are associated with an increased risk and worsening of various health conditions, such as cardiovascular disease,

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including stroke and acute myocardial infarction; respiratory diseases, such as asthma and lung disease; and various types of cancer, including lung cancer.^{14,15} For all the reasons stated above, and following the recommendations of the World Health Organization,¹¹ we call for the regulation of the use of waterpipes in public spaces, with and without tobacco, deterrents to their use in both closed and open premises, and inspections to control compliance with smoking laws. We would also urge restrictions in advertising, the application of fiscal measures to reduce its demand, particularly among young people, and the inclusion of this way of smoking in educational and preventive programs addressed to adolescents.

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Conflict of interests

None.

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