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When federal science is muffling harm reduction by vaping

Philippe Poirson

The *Swiss Medical Weekly* paper by Gmel et al. "E-cigarette use in young Swiss men: is vaping an effective way of reducing or quitting smoking?" [1] contains errors and methodological bias. Meaningful data and context are hidden. The conclusion that there is no beneficial effect of vaping for smoking cessation or reduction is abusive.

Data used in the paper about vaping was collected only in the second questionnaire (the follow-up) of the C-SURF survey in 2013. No question about vaping was asked in the first part of the investigation. This study is not longitudinal on the subject of vaping, and cannot claim to measure respondents' behavioural evolution on this issue [2]. At best this could be a cross-sectional study about vaping among young men in Switzerland in 2013, if it was about vapers [3].

The paper defines a vaper as someone who had used at least once an e-cigarette in the year before completing the questionnaire. Authors hid the frequency of use data, although it was collected in the questionnaire. This bias creates confusion between daily vapers and experimenters [4]. In contrast, a longitudinal study by Biener [5] shows that people vaping daily for at least 1 month are more likely to quit. Hitchman [6] found differences in quitting depending on the type and frequency of vaping used, in favour of daily use of "tank" devices (vs "cigalikes").

The C-SURF survey data on vaping was published in August 2013 in the *Journal of Epidemiology Community Health* [7]. Daily vapers and people who just tried vaping are differentiated. Of 5081 participants, 249 (4.9%) had used an e-cigarette during the year. Of these, 30 young men were vaping daily, including 27 smokers and 3 ex-smokers. Why did these data disappear? "Unfortunately, despite the large sample size, prevalence rates in the present study were too small to distinguish between intensive and intermittent EC use", is the justification in the *SMW* publication. The hidden fact is that 88% of the panel were smokers who were not regular vapers. So, for the vast majority, it seems right to say that keeping the smoking habit while vaping episodically is not beneficial for smoking cessation.

No question was asked in the C-SURF survey as to whether vaping liquids with or without nicotine was used by respondents. Nicotine is an aspect of the smoking addiction that the authors seem to know since they quote Fagerström's test, even if it is his old 1991 version. Prof. Fagerström revised his test in 2012 [8]. The lack of information about the kind of vaping liquid used distorts understanding of the results. Even more confusing, there is no word in the study about the prohibition to sell vaping liquids with nicotine in Switzerland. The very special Swiss situation is simply ignored by the authors. We analysed, on the basis of Swiss [9] and English statistics [10], the deficit of tobacco quits generated by the federal policy [11]. The ratio between trial and adoption of vaping is six times lower in Switzerland than in England. Whereas 1 in 3 English smokers adopt vaping after trying it, only 1 in 20 Swiss smokers do. Of the million Swiss smokers who had tried vaping until 2014, there could have been 100'000 more quitters if they had easy local access for nicotine-containing liquids.

Epidemiological predictors such as the number of smokers among relatives, the attitude to smoking, social pressures, legal stigmas against vapers in Switzerland, health status, socio-professional status or concomitant use of other psychoactive substances, are not considered in the paper. Another bias is partly raised. The authors note that the panel consisted "only of men". But no adjustment is made in the analysis. Not only women but older people and foreigners are also ignored. This massive selection bias should have led the authors to refrain from the universal claim they highlighted.

The evacuation of all health benefits of cigarette consumption reduction with vaping is based on only one reference. This reference is not about reducing smoking by vaping, but on the compensatory effect of smoking reduced-nicotine cigarettes [12]. There is no reason *a priori* to extend this to vapers continuing to smoke (dual-users). On the contrary, empirical evidence suggests that vaping with nicotine inhibits the craving for tobacco [13]. A Cochrane meta-analysis [14] showed that vaping with nicotine significantly increased reducing (RR = 1.31) and quitting (RR = 2.29) smoking rather than vaping without nicotine. This is consistent with evidence that nicotine substitutes reduce intake of tobacco smoke [15]. Reducing cigarette consumption alone is illusory for health benefits. But reducing smoke exposure with nicotine substitutes, like vaping, provides harm- and damage-reduction [16].

Other previous research on the topic is ignored in this paper. One study found that smoking reduction using vaping among asthmatics significantly reduced their lung disease [17]. Another showed that reducing smoked tobacco, with nicotine replacement therapy, increases up to four times the probability of future complete quitting [18]. In a real lon-

gitudinal survey, among smokers who were vaping daily at baseline, 46% had stopped smoking after 1 year [19].

Conclusion

Until the 1990s, heroin exit peaked at rates similar to those of smoking, around one success in ten tries. The epidemiological paradigm changed when the terms on which substitutes work to offer a better way out for addicts were studied [20]. It established good practice for creating an environment favourable to harm reduction in the encounter between user and the withdrawal means. Unfortunately, official federal science remains ideologically blind to this point for tobacco control in Switzerland. The result of this anti-harm-reduction political ideology is shown by the C-SURF survey: 46.7% smokers for only 0.5% daily vapers in young Swiss men [7]. Whereas there are already more than six million Europeans who stopped smoking with the help of vaping [21].

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Correspondence: *Philippe Poirson, 6 rue Cingria, CH-1205 Genève, vapolitique[at]gmail.com*

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