Risks from passive smoking by workers in the catering industry: Smoke-free legislation in Hong Kong

AJ Hedley, SM McGhee, S Lu, HK Lai, LC Wong, R Fielding, CM Wong, TH Lam, J Repace
Presenters: AJ Hedley, CM Wong, SM McGhee, TH Lam
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1 **Risk from passive smoking**
Good morning ladies and gentlemen of media; welcome to this presentation on the health effects of second-hand smoke among catering workers in Hong Kong. Our air was to carry out an evaluation of Hong Kong's legislation on smoking in the workplace as an issue of accountability in public health.

2 One of our important messages today is that we need a *science based* approach to *public health policy* if we are going to achieve essential goals in *health protection*.

Unfortunately our story today describes a serious failure of the public health system in the protection of workers health.

3 This political story begins in 2001 on the "economics" of smoke-free catering was misinformation by the tobacco industry and mistakes by the Catering Industry. The Hong Kong Catering Industry Association Report by KPMG, supported by a tobacco company, told us that the Government's proposed smoking ban would cost the catering industry $7.9 Billion a year and over 21,000 jobs.

This report by KPMG was a totally false and seriously misleading analysis of the effect of smoke-free policies on catering and licensed trade business in Hong Kong.

4 We made a detailed rebuttal of the KPMG report which we presented to the LegCo Health Services Panel on 25 October 2002.

There was no response to our specific criticisms of the KPMG report. (Our detailed analysis of the KPMG report is available at one of our websites http://sph.hku.hk/doc/smoking2002/economics.pdf.

5 At the same time KPMG produced another report on the economics of the new smoke-free policy in Ottawa's hospitality industry.

This time they used the correct methodology and found:

- Employment in the food sector rose by 6.5%
- They predicted a long term *positive* impact of the smoke-free policy
- And they said ***"claims of declining revenues have always been proven false".***

6 Here is more misinformation: In September last year 2007 we received a new headline from the Hong Kong Catering Industry Association, again supported by money from the Tobacco Industry Association, which commissioned a report by Hong Kong Polytechnic University. They claimed that Hong Kong restaurants were "hard hit by smoking ban".

This claim is not based on any kind of objective data, audited accounts or taxable receipts.

7 In contrast HKSAR government data shows that business has been good. From the first 3 quarters of 2006 to the first 3 quarters of 2008 ***the increase in restaurant receipts is 30%.***

Our review of catering and licensed trade economics worldwide clearly shows that smoking bans benefit both business and health. ***We acknowledge that some venues will experience turbulence in their trade if they do not change and adopt to new health legislation, but they must not be allowed to poison staff.***

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8 We know that SHS causes heart disease and cancers and in Jan 2006 we showed the risks for Hong Kong catering workers. You can read this 2006 paper on our website we presented this to:

The LegCo Bills Committee
The Government Food and Health Bureau and
The media

and published it in an international scientific journal.

What does it show? Here are the levels of tobacco chemicals we found in the urine of non-smoking workers.

This evidence of damage to the health of workers from SHS was ignored by government and LegCo.

9 The new legislation failed to protect workers' health and provided exemptions for premises which could meet "qualification criteria".

10 The exemption of many workplaces from the smoke-free law created a large at-risk group of workers. It is difficult to estimate the total number of workers who have to work in tobacco smoke but it is probably between 6,000 and 16,000.

Some workers will be smokers, many will be non-smokers.

The Occupational Safety and Health Council reported that about 40% of catering workers were smokers.

11 Does it matter if smokers inhale SHS?

Yes: We have previously published evidence which clearly shows that smokers who breathe SHS have increased respiratory symptoms and doctor visits.

Some managers in the catering industry have tried to argue that it doesn't matter if smokers breathe SHS. This is not true, and we want to emphasise again that the risk of breathing SHS is the same for both smokers and non- smokers.

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12 So now we can turn to the new study. Our objective was to examine whether workers in exempted catering venues were being harmed by SHS exposures. To recruit our subjects we used as our sampling frame a list of venues with catering licences and those which were on the Department of Health list of exemptions. They included (a) those which were supposed to be entirely "smoke-free", (b) those with patio and terrace seating for smokers and (c) those which were exempted from the law.

- 515 venues were visited
- 392 refused us access
- 103 allowed us to interview and examine the staff

* We excluded smokers from our sample by measuring the level of carbon monoxide in their breath

* and finally analysed the data on 204 workers

131 from smoke-free venues
26 with patio seating which allowed smoking
47 which were exempted from the smoking ban

13 The map shows you that the workplaces of our sample were widely distributed across the SAR in Hong Kong Island, Kowloon and the New Territories.

14 All workers were interviewed and tested in their workplace.

15 How did we assess and test the exposure of workers to SHS?

First, we used a questionnaire based interview to record demographic information and their perceived health state:

* We documented their sources of exposure to tobacco smoke including **customers, co-workers, home and leisure activities**.

* For this presentation we will focus on three aspects:

  - Workers perceptions of the risks of smoke in the workplace
  - Sources of exposure to tobacco smoke
  - Risk avoidance behaviours (to avoid SHS)

16 We made four health measurements in the workers and their workplace:

* The level of fine particulates in the indoor and outdoor air.

* Lung function was tested using standard equipment called a spirometer.

* We measured breath carbon monoxide level to any exclude smokers.

* and analyzed each worker's urine for the tobacco chemical cotinine.

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17 This graphic shows the urinary cotinine levels in our controls and catering workers.

* Our controls were non-smokers, worked in a smoke-free environment and made every effort to avoid tobacco smoke. You can see they mostly have low cotinine levels, but NOT zero which is the only safe level. One control had a very high level and is clearly being heavily exposed from some source.

* All catering workers had markedly raised cotinine levels. Higher levels were found in workers in venues with patio seating and the highest levels were seen in workers of exempted venues.

18 It is often claimed that ventilation can protect us from SHS.

Question: Does ventilation help to reduce exposure?

No: Smoking outdoors and indoors contaminates indoor air regardless of ventilation.

To examine this issue we have plotted cotinine levels by

- air conditioning
- open doors and windows
- smoking indoors and outdoors

However these results clearly show that wherever there is tobacco smoke both the working area and workers will be contaminated. Neither air-conditioned or open doors and windows ventilation; nor outdoor air removes tobacco chemicals.

This is an important finding because it shows that no ventilation measures can protect people from SHS.

19 Question: Who is most at risk?

We examined cotinine levels in waiters and other staff. Our study clearly shows that although everyone is exposed, waiters, compared to other catering staff, are most exposed.

Serving smokers increases workers' risks.

20 Question: Could high cotinine levels be explained by exposures outside work.

No: The dominant cause of exposure to tobacco chemicals in non-smoking staff is smoking in their workplace.

21 Question: Could high cotinine in workers in "non-smoking" venues be caused by co-workers smoking?

Yes: When co-workers smoke we observe higher levels of cotinine in non-smokers.

22 Question: Have cotinine levels changed before and after the smoke-free law?

Yes: In our controls and workers in venues which are designated "smoke-free" we can see a significant reduction in cotinine in urine samples.

(We have used data from partially restricted venues before the legislation to compare with the current data from patio seating venues.)

However there is no difference in the very high levels of the unrestricted/ exempted venues. These workers have not benefited from the legislation.

23 We can look closer at those who benefited – in the Chinese restaurants and Cha Charn Ting.

In the restaurants there is an 85% decline in the median level of cotinine and in the Cha Charn Ting a 94% decline.

There is still scope for improvement because there is still tobacco smoke there but workers in smoke-free (non-exempted) venues gained enormous health protection from the law.

24 Question: Do workers perceive the risks of health effects from poor indoor air quality?

Yes: All worker groups showed sensitivity to smoke in their workplace, but perceptions of risk were highest among workers in exempted premises.

25 Question: Does perception of risk lead to self-protection?

Yes: – but only a little.

You can see that those workers who said they were "Always bothered" by smoke had lower urine cotinine than those who said they were "Seldom Bothered".

but the cotinine levels are still high in all groups.

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26 We carried out this study in a very high pollution environment. Daily outdoor air quality in Hong Kong is very poor and this affects lung function and causes other health problems.

27 One important pollutant is the particulate matter called $PM_{2.5}$. $PM_{2.5}$ is a group of particles with a diameter of 2.5 millionths of a metre or smaller; even as small as 0.1 millionth of a metre. (A human hair is about 70 millionths of a metre). These $PM_{2.5}$ fine particulates are typical

components of cigarette smoke and we can use measurements of them to detect differences in cigarette smoke concentrations.

28 Here are comparisons of indoor $PM_{2.5}$ concentrations in a smoking bar and a non-smoking restaurant.

The lower tracing is outdoor $PM_{2.5}$ and the upper tracing is the indoor $PM_{2.5}$ level.

Particulates in the smoking bar are very high and in this example they are more than twice the level in the restaurant.

29 * In our study the indoor $PM_{2.5}$ in exempted smoking venues is 4 times as high as in non-smoking venues.

* Whereas there is no significant difference in outdoor levels at non-smoking and exempted venues during our survey.

* Actually the indoor air in the non-smoking venues was slightly better than outdoor air but the median indoor particulates at exempted smoking venues was 100% higher, and half of them ranged from twice to seven times higher.

30 We measured lung function in workers to test the effects of particulates in *exempted* and *smoke-free* venues.

31 * We found that the higher average levels of $PM_{2.5}$ in exempted smoking venues were associated with much lower lung function in workers than in workers in smoke-free venues.

* You can see that the apparent reduction in lung function with increasing $PM_{2.5}$ levels is much greater in older workers but all ages are affected.

On average we estimate that this measure of lung funcation was reduced by 14% in our sample of workers in exempted smoking venues compared to smoke-free venues. In the older subgroup aged 30-65 years the reduction was 22%.

The air quality in both types of venue was poor because of the highly polluted outdoor air in Hong Kong when compared to the World Health Organisation Air Quality Guidelines.

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32 Our conclusions are as follows:

- **Many catering workers are poisoned by SHS:**
  Tobacco chemical levels in workers' urine are consistently higher in exempted venues and in those with patio seating.

  We do not support the use of smoking patios and terraces in food and drink serving areas. They are a health risk for workers as well as customers.

- **Catering management needs to prevent all smoking to protect both staff and customers:**
  Cotinine levels in staff are related to tobacco smoke from both customers and other staff who smoke in break periods. All venues should be better managed to prevent exposures to SHS due to smoking by staff or customers.

- **Our public health legislation needs to be comprehensive:**
  It is clear that cotinine levels (and health risks) are lower after the smoke-free law, but many workers cannot benefit because of exemptions.

33
- **Workers cannot easily protect themselves:**
  Workers in exempted catering premises were more aware of their risk from SHS but were either *less-likely* or *able* to take preventive action against exposure than workers in non-smoking workplaces.

- **Many workers do not know the risk associated with breathing SHS:**
  We found that workers in non-smoking venues who had lower perceptions of risks from SHS than their co-workers had higher urinary cotinine levels.

34
- **The legislation has been responsible for increased health risks:**
  After the smoke-free legislation, all workers in exempted venues are still exposed to very high levels of SHS, associated with very high levels of $PM_{2.5}$, when compared to workers in smoke-free premises.

- **Many workers have impairment of lung function:**
  We found an inverse relationship between workers *lung function* and indoor $PM_{2.5}$ level, which is key marker of tobacco smoke indoors. Damage to lung function is a serious health problem.

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The Biztro at IFC Mall, in Central, one of the three establishments which argued that they mostly sold alcohol not food. Photo: Dickson Lee

Bars win in smoking-ban case

36 **Public Health Lessons to be learned**

- Hong Kong urgently needs better air quality both indoors and outdoors
- Future public health policy and legislation should not trade off people's health for vested interests
- ***Hong Kong's catering and licensed trade does not need to work in filthy air to make a profit***