SEATCA

SOUTHEAST ASIA TOBACCO CONTROL ALLIANCE

The Collaborative Funding Program for
Southeast Asia Tobacco Control Research

RISKS FOR RESPIRATORY AND SENSORY SYMPTOMS FROM PASSIVE SMOKING BY WORKERS IN THE CATERING INDUSTRY: A STUDY IN PENANG

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Supported by
Southeast Asia Tobacco Control Alliance (SEATCA)
Under The Collaborative Funding Program for Tobacco Control Research

Financial support from
The Rockefeller Foundation and
Thai Health Promotion Foundation (ThaiHealth)

August 2008

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGEMENTS

We would like to thank the Southeast Asia Tobacco Control Alliance (SEATCA), the Rockefeller Foundation and the Thai Health Promotion Foundation (ThaiHealth) for providing funding for this project.

We wish to express our sincere gratitude to Ms Bungon Rithiphakdee of SEATCA, Ms Debra Efroymson of HealthBridge and Ms Menchi G. Velasco of SEATCA, for their valuable inputs. Special appreciation is also extended to Dr Goh Kok Yeong, Director of Health, Penang Municipal Council for his collaboration and support.

We would like to thank all the restaurant owners, managers, supervisors and their employees who provided consent and cooperation to participate in the study. Without their support this study would not have been possible.

EXECUTIVE SUMMARY

A study of 245 non-smoking Malaysian restaurant and bar employees in Penang, Malaysia was conducted to determine their self-reported exposure to second hand smoke (SHS) at their workplace as well as recent occurrences of respiratory symptoms and sensory symptoms in the last 30 days. Respiratory symptoms include wheeze, shortness of breath, cough in the day or night and phlegm. Sensory symptoms are irritated eyes, running nose/sneeze and painful throat. The study found that a majority of workers in the hospitality industry were exposed to second hand smoke in the workplace on a daily basis. The highest exposure was reported by bar workers. This observational study provided clear evidence of the weak compliance to smoking ban regulation. A sizeable proportion of restaurants has partial bans and did not comply by having enclosed smoking rooms with ventilators.

Positive associations were found between workplace SHS exposure and the presence of any respiratory symptoms such as wheezing or whistling in the chest, shortness of breath, cough and phlegm. Exposure to SHS was significantly associated with presence of sensory symptoms such as irritable eyes, running nose and painful throat. The positive associations between respiratory and sensory symptoms observed were largely consistent with other workplace studies of Western and Asian populations.

The findings show that partial smoking bans do not work because intensity of exposure to second hand smoke among workers and patrons remain high. Implementation and enforcement of smoke-free policies should be strengthened in Malaysia to protect both workers as well as the public. There should also be a total smoking ban in restaurants, bars and pubs.

INTRODUCTION

There is a well established causal link between exposure to second hand smoke (SHS) and increased morbidity and mortality. Epidemiological and other studies have demonstrated that SHS exposure increases the risk of cardiovascular disease[1,2], lung cancer[3], stroke[4], and asthma[5]. In addition to such diseases, there is also evidence that SHS causes respiratory symptoms in adults[6].

Workers' exposure to SHS in the workplace is common. Their level of exposure varies depending on the type of establishment and the presence or absence of smoke-free policies. Hospitality industry workers experience a double risk with regards to SHS exposure in the workplace. Firstly, the levels of SHS in service establishments such as restaurants and bars are high and secondly, hospitality industry work sites are least likely to be covered by smoke-free laws or policies[7]. A major published review of mean indoor air concentrations of nicotine in various workplaces revealed that workers in restaurants are exposed to nicotine levels that are approximately 1.6 times higher than typical office workers. Bar workers' exposure to nicotine levels are approximately 7.6 times higher[8].

Findings from past studies have provided compelling evidence that non-smoking indoor workers are adversely affected by exposure to SHS at work. A study of indoor workers in Victoria, Australia by Wakefield and others (2003)[9] found that exposure to workplace SHS was significantly associated with an increased risk of wheeze (OR = 4.26), frequent cough (OR = 2.26), sore eyes (OR = 3.77), and sore throat (OR = 2.70). In another comparative study of club, casino and officers, Wakefield and others (2005) found club and casino workers to have higher exposure to workplace SHS than office workers. Casino and club workers were also more likely to have sore eyes (OR = 5.5), and a sore throat (OR = 4.3)[10]. A study of non-smoking police officers in Hong Kong found significant odds ratios for respiratory symptoms among both male and female officers[11]. A more recent study found that workplace SHS exposure is associated significantly with frequent respiratory symptoms, both cross-sectional and prospective, thus providing strong evidence that the association is causal[6].

In addition to the adverse health effects, SHS exposure at work also impacts on use of health care services and absenteeism[12]. Exposure of healthy adults to SHS at work is also related to utilisation of health care services and extra time off work. This results in short-term costs to the health services, to employers and to those exposed.

In Malaysia, air-conditioned eating places such as restaurants are permitted by law to have a designated smoking area within the premise. There are no smoking restrictions in bars, discotheques or night clubs.

A study to assess the difference in the average levels of respiratory suspended particulates in places that were smoke-free (no smoking observed during sampling) and places that were not (smoking was observed during sampling) in Penang (n=50) and Kuala Lumpur (n=102) was conducted in 2006. Second hand smoke was measured using a portable air measurement device that measures particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$). Second hand smoke is not the only source of indoor particulate matter, but $PM_{2.5}$ monitoring is highly sensitive to it. While ambient particle

concentrations and cooking are additional sources of indoor particle levels, smoking is by far the largest contributor to indoor air pollution[13].

There were significant differences in levels of indoor air pollution[14,15]. Levels of indoor air pollution in the Penang venues ranged from 7 µg/ m^3 (micrograms per cubic meter) to 1,125 µg/m^3. The average level of $PM_{2.5}$ in smoke-free venues was 46 µg/ m^3 and in smoking venues the level was 181 µg/ m^3. Bars have an average level of 402 µg/ m^3 and restaurants 61 µg/m^3. Similar differences were found between smoking and non-smoking venues in Kuala Lumpur. Levels of indoor air pollution in the Kuala Lumpur venues ranged from 15 µg/m^3 to 3,825 µg/ m^3. The average level of $PM_{2.5}$ in smoke-free venues was 22 µg/m^3 and in smoking venues the level was 459 µg/ m^3. Bars have an average level of 680 µg/m^3.

Given the likelihood that the levels of exposure to passive smoking at workplaces are highly varied, a study to determine the health impact of passive smoking among non-smoking employees would be necessary to drive expansion of smoking bans, particularly at catering venues. Furthermore, such a study would also provide evidence on the level of compliance to existing bans. The purpose of this study was to determine if tobacco smoke exposure in the workplace put co-workers at greater risk of developing respiratory symptoms, eye irritation, painful throat and running nose than non-exposed co-workers.

STUDY OBJECTIVES

2.1. To determine exposures to SHS in non-smoking catering workers employed in non-smoking and smoking restaurants.
2.2. To identify presence and history of respiratory symptoms in these two categories of workers.
2.3. To determine the association between SHS exposures at the workplace and reports of respiratory and sensory symptoms.
2.4.To estimate the short-term costs of exposure to SHS at work, such as use of health care services and absenteeism.

METHODOLOGY

3.1 Study Design

The study used a cross-sectional study design. The initial proposal planned to compare 2 groups of catering workers, i.e. one group who worked in smoke-free premises and another group who were employed in premises that permit smoking. As the study progressed it became clear that premises which claimed to have a smoke-free policy did not fully implement this policy in practice.

3.2 Sampling Design

Subjects were recruited from restaurants (include restaurant/café that has a bar) where indoor areas were air-conditioned. These restaurants are categorised into 2 types of restaurants: 1) non-smoking restaurants, where smoking is not allowed indoors (in some of these restaurants smoking was allowed outdoors), and 2) smoking restaurants, where smoking is allowed indoors (either restricted or with no restriction).

The study was conducted in the Penang State. Non-smoking Malaysian workers who have worked at least three months in the restaurants and who agreed to participate in the study were selected and interviewed face-to-face. Non-smoking workers are defined as workers who have never smoked in their lifetime or those who have quit smoking for more than six months.

A list of restaurants including bars and cafes on the island of Penang was obtained from the Penang Municipal Council. A total of 80 air-conditioned restaurants (including bars and pubs) were randomly selected from a total of 156 licensed air-conditioned premises. A total of 72 premises with eligible respondents agreed to participate in the study. A total of 245 workers who fulfilled the selection criteria and gave their consent were interviewed.

Table 1 presents a summary of the characteristics of restaurants covered in the study. Over 80% were restaurants. About 17% were either bars, pubs or cafes. All were enclosed air-conditioned premises with a third also having outdoor seating areas. When asked about their smoking policy, three thirds of the restaurants reported that they imposed a non-smoking policy indoors. However, when respondents in the latter premises were interviewed concerning implementing the smoke-free policy, most said that smoking patrons did not comply with the non-smoking policy. Ten restaurants opening declared that they permitted smoking in some indoor areas, in most cases there were no partition of smoking areas. In another 13 premises, smoking was allowed everywhere. These observations provided clear evidence that there were poor compliance to smoking bans in most restaurants. The only exception was the 5 fast food restaurants that has successfully implemented and maintained a smoke-free status. Most of these restaurants were moderate in size with a seating capacity of between 50 to 150 persons. A sizeable number of these restaurants have a bar area. Almost all have indoor ventilation.

Table 1: Characteristics of restaurants

	n=72	**%**
Type of restaurant		
Family restaurant	36	50.0
Fast food restaurant	5	6.9
Fine dining restaurant	19	26.4
Bar/pub	6	8.3
Cafes	6	8.3
Type of environment		
Enclosed air-conditioned only	48	66.7
Enclosed air-conditioned and outdoor/open air	24	33.3
Smoking policy		
Smoking is not allowed in any indoor area	49	68.1
Smoking is allowed only in some indoor area	10	13.9
Smoking is allowed everywhere	13	18.1
Seating capacity in indoor area		
Less than 50	18	25.0
50-99	33	45.8
100-149	13	18.1
150 or more	8	11.1
Presence of bar		
Yes	32	44.4
No	40	55.6
Presence of indoor ventilation		
Yes	68	94.4
No	4	5.6
Smoking allowed in outdoor sitting area		
Yes	24	33.3
No	3	4.2
No outdoor area	45	62.5

3.4 Measures

i. Self-reported health-related outcomes. Respondents were asked if they had the following respiratory symptoms in the previous month. Questions were obtained from the International Union Against Tuberculosis and Lung Disease Bronchial Symptoms Questionnaire (wheezing or whistling in the chest, shortness of breath, cough during the day or night, phlegm) and sensory irritations (red or irritated eyes, running nose, sore nose, sneezing, painful or scratchy throat). A composite variable was created to represent the presence of any respiratory symptoms, excluding rhinitis. Another composite variable was created to represent the occurrence of sensory irritations.

Respondents were also asked if they had illness episodes, number of days of sick leave, doctors' consultations and hospitalization in the last one year.

ii. Self-reported exposure to passive smoking. Respondents were asked concerning their exposures to second hand smoke at the workplace, home, and leisure exposures, exposures to employees smoking (inside or outside) during break periods, and their past smoking history.

iii. Information about the respondent's workplace were collected, such as details of the job, smoking restrictions, number of people smoking during peak time, indoor ventilation and duration of shift-work and off-duty period of subjects before they were interviewed, type of restaurant (open air, enclosed air-conditioned, or both); number of workers and seating capacity of restaurant.

iv. **Demographic and other information** (age, gender, level of educational attainment, duration working in restaurant; previous work and how many years, etc.)

3.5 Data Collection Procedures

Researchers obtained cooperation of managers or owners of each selected premises. Full time workers within each premise were enumerated together with their smoking status. Non-smoking employees from each premise who were willing to participate in the study were selected and interviewed face-to-face.

3.6 Data Analysis

Data were processed and analyzed using the SPSS Version 14. Bivariate analyses were carried out to determine association of levels of exposure to SHS at workplace and reports of respiratory and sensory symptoms. Logistic regression was used to calculate odds ratios (ORs) for respiratory and sensory symptoms associated with exposures to second hand smoke in the workplace and at home.

3.7. Human Subjects/ Ethical Concerns:

The research proposal was submitted to the Universiti Sains Malaysia's ethical review committee and approval was ascertained before implementation. Respondents were informed about the research objectives, methods, the involvement of the respondents and the length of time of involvement, and plan on the use of the research outcomes, including how these will be disseminated. Respondents were assured about the

confidentiality of the information they provided and the presentation of the results of the research will always be done in the collective form.

3.8. Policy Translation

Study findings on levels of exposure to SHS at the workplace and its impact on the health of non-smoking workers as a result of passive smoking at the workplace could be used to drive expansion and implementation of smoke-free policies, particularly for catering industry.

3.9. Dissemination Plan

a. The research report will be submitted to the Ministry of Health, Department of Occupational Safety and Health (DOSH); Malaysian Trade Union Congress (MTUC).
b. Policy briefs summarising salient research findings and recommendations will be prepared for presentation to policymakers.
c. Researchers would utilise the existing communication mechanism of the Clearinghouse for Tobacco Control to communicate the study findings to its network of health professionals, researchers as well as policymakers. Common channels are through press conferences and the presentation of results in fact sheets.
d. To hold a Consultative Meeting on Secondhand Smoke (SHS) with Department of Occupational Safety and Health (DOSH) and the Malaysian Trade Union Congress (MTUC) where findings can be discussed.

RESULTS

Table 2 lists characteristics of the respondents. Most of the respondents were females and in their twenties, 16% were less than 20 years of age, and the rest were over 30 years of age. Most (62.4%) had a secondary education, a third had a tertiary education. Most held positions as waiter or waitress in the restaurants. Just over half of the respondents were employed less than a year in the current workplace. Half have worked over one year. Respondents worked an average of about 8 hours daily. Almost all respondents were employed in restaurants with a small minority in pubs or bars.

Table 2: Characteristics of respondents

	N	%
Age group (years)		
Less than 20	39	16.0
20-29	144	59.0
30-39	35	14.3
40 and above	26	10.7
Gender		
Male	96	39.3
Female	148	60.7
Educational attainment		
Primary or less	12	4.9
Secondary	153	62.4
Tertiary	80	32.7
Position in establishment		
Managerial/administrative	49	20.1
Supervisor	40	16.4
Chef	14	5.7
Waiter/waitress	136	55.7
Others	5	2.0
Length of employment		
Less than 6 months	89	36.3
6-11 months	42	17.1
1-3 years	70	28.6
> 3 years	44	18.0
Mean Number of hours worked daily	8.37±1.4	
Type of restaurant		
Family restaurant	102	41.6
Fast food restaurant	57	23.3
Fine dining restaurant	56	22.9
Bar/pub	16	6.5

Others	14	5.7
Type of environment Enclosed air-conditioned only Enclosed air-conditioned and Outdoor/open air	 176 69	 71.8 28.2

Table 3: Reported smoking policy by type of venue

Type of Restaurant	**Smoking not allowed in any indoor area (%)**	**Smoking is allowed in some indoor area (%)**	**Smoking allowed everywhere (%)**	**Total (%)**
Family restaurant (n=36)	61.1	22.2	16.7	100.0
Fast food restaurant (n=5)	100.0	-		100.0
Fine dining restaurant (n=19)	84.2	10.5	5.3	100.0
Bar/pub (n=6)			100.0	100.0
Cafes (n=6)	100.0			100.0

A comparison of smoking policy showed a significant variation between hospitality venues. Fast food restaurant and cafes reported that smoking is not allowed in any indoor areas. However, a substantial proportion of family and fine dining restaurants still permit smoking in some or all indoor areas.

Table 4: Reported exposure to second hand smoke in various places in past 7 days (% reported exposed)

Place	**N**	**%**
At workplace	149	60.8
At home	78	31.8
At public places	154	62.9
At social settings (recreational places)	54	22.0

About two-thirds (60.8%) of the respondents reported being exposed to second hand smoke in the workplace mainly due to smoking by patrons and colleagues. About a third (31.8%) of the study subjects reported exposures to SHS in their homes. Interestingly, exposure to second hand smoke in public places was the highest (Table 4).

Table 5: Reported exposure to second hand smoke in the workplace by type of restaurant (% reported Yes)

Type of Restaurant	N	% reported exposure	Mean Duration of Exposure to second hand smoke per day (in hours)
Family restaurant	102	71.6	0.7 ±1.0
Fast food restaurant	57	35.1	1.0±0.8
Fine dining restaurant	56	51.8	1.7±1.3
Bar/pub	16	100.0	6.5±3.0
Cafes	14	78.6	0.8±0.6

Statistically significant difference at $p<0.0001$

Table 5 presents a comparison of exposure to second hand smoke in the workplace between workers from various types of hospitality venues. There is a statistically significant difference in the proportion of workers reporting exposures in the workplace. All bar workers reported exposures. A majority of family restaurant and café workers reported exposures as well. Only one third of workers in the fast food restaurants were exposed. Comparison of the duration of SHS exposure in a day showed that bar workers were most exposed, averaging 6.6 hours daily. Workers from other venues were significantly less exposed with about an hour of exposure a day.

Reports on respiratory and sensory symptoms are shown in Table 6. About a third of respondents experienced coughing either during the day or night and thus was the most common respiratory symptom. Some experienced shortness of breath and having phlegm. Wheezing or whistling in the chest was rather rare. About 44.7% of the study subjects had any respiratory symptoms while 4.1% reported rhinitis (Table 6).

Table 6: Reports of respiratory and sensory symptoms in the last 30 days

	n	%
Respiratory symptoms		
Wheezing or whistling in the chest	15	6.1
Shortness of breath	28	11.4
Cough during day or night	78	31.8
Phlegm	56	22.9
Any respiratory symptom	109	44.7
Rhinitis	10	4.1
Sensory symptoms		
Red or irritated eyes	35	14.3
Running nose, sore nose or sneezing	94	38.4
Painful or scratchy throat	81	33.1
Any sensory symptom	137	55.9

The percentage of respondents reporting sensory symptoms was higher. One in two respondents had any sensory symptoms. Running nose, sore nose or sneezing and painful or scratchy throat were the most frequently reported symptoms. One in ten reported having red or irritated eyes. The associations between exposure to second hand smoke at the workplace, home and public places were examined. Reports on any respiratory and sensory symptoms were only found to be associated with exposure to second hand smoke at the workplace. As listed in Table 7, there was a consistently greater percentage of respiratory and sensory symptoms in workers exposed to SHS in the workplace. Experiences of wheezing or whistling in the chest and presence of phlegm were found to be associated with exposure to SHS in the workplace. Exposed workers were 4.49 times more likely to report presence of wheezing in the chest and 1.83 times more likely to report presence of phlegm compared to non-exposed workers. Workers exposed to SHS at the workplace were 1.62 times more likely to report any respiratory symptoms compared to workers who were not exposed to SHS at the workplace. Painful throat and irritated eyes were 2 sensory symptoms that were associated with exposure to SHS. Workers exposed to SHS at the workplace were 1.83 times more likely to report any sensory symptoms compared to non-exposed workers. Conversely, rhinitis was not associated with SHS.

Table 7: Reports on occurrence of and adjusted odds ratios (OR) for respiratory and sensory symptoms in the last month in relation to second hand smoke (SHS) exposure at workplace

	None exposed to SHS		Exposed to SHS		p-value
	%	OR	%	OR (95% CI)	
Respiratory symptoms					
Wheezing or whistling in the chest	2.1	1	8.7	4.49 (0.99-20.4)	0.051
Shortness of breath	10.4	1	12.1	1.18 (0.52-2.68)	0.69
Cough during day or night	29.2	1	33.6	1.23 (0.70-2.14)	0.47
Phlegm	16.7	1	26.8	1.83 (0.96-3.51)	0.07
Any respiratory symptom	37.5	1	49.3	1.62 (0.96-2.74)	0.07
Rhinitis	4.7	1	3.1	0.654 (0.16-2.59)	0.55
Sensory symptoms					
Red or irritated eyes	9.4	1	17.4	2.04 (0.91-4.57)	0.08
Running nose, sore nose or sneezing	33.3	1	41.6	1.43 (0.83-2.43)	0.19
Painful or scratchy throat	25.0	1	38.3	1.86 (1.05-3.28)	0.03*
Any sensory symptom	46.9	1	61.7	1.83 (1.09-3.07)	0.02*

* Statistically significant at $p<0.05$

Table 8: Reported illness and health-related condition in past 12 months by reported exposure to SHS in workplace (% Yes)

	Exposed to SHS in the Workplace	Non-exposed to SHS in the Workplace	p-value
Fallen ill	79.2%	82.1%	0.577
Taken sick leave	38.3%	58.3%	0.002
Had one or more doctors' consultations	77.2%	74.0%	0.565
Had hospitalization	6.0%	6.3%	0.947

Table 8 presents reports on illness and health-related conditions in the past twelve months between workers who were exposed to SHS in the workplace and those who were not exposed. There were no associations between reports on illness and seeking health care between the 2 groups of workers.

DISCUSSION AND RECOMMENDATIONS

Study findings showed that a majority of workers in the hospitality industry were exposed to second hand smoke in the workplace on a daily basis. This observational study provides clear evidence of the weak compliance to smoking ban regulation. Most restaurants have partial bans and did not comply with the regulation by having enclosed smoking rooms with ventilators. Bar workers were most exposed to SHS in the workplace.

In this cross-sectional study we found positive associations between workplace SHS exposure and the presence of any respiratory symptoms such as wheezing or whistling in the chest, shortness of breath, cough and phlegm. Exposure to SHS was significantly associated with presence of sensory symptoms such as irritable eyes, running nose and painful throat. The positive associations between respiratory and sensory symptoms observed were largely consistent with other workplace studies of Western and Asian populations[9,6].

Rhinitis was not associated with SHS exposure, which was consistent with previous studies[6]. Although the lack of biochemical validation for SHS exposure and objective measurement of respiratory symptoms were some of the limitations of this study, the null findings for rhinitis, but positive findings for other respiratory symptoms, tend to support the validity of our study findings. Moreover, respiratory symptoms were asked before SHS exposure to ensure that reporting of symptoms was not caused by prompting of SHS exposure.

There was, however, no associations found between exposure to second hand smoke in the workplace and reports of illness episodes, number of days of sick leave taken, number of doctors' consultation and hospitalization.

The lack of a strong statistical significance linking exposure to SHS and respiratory and sensory symptoms could be attributed to the small sample size. Nevertheless, the findings suggest the presence of a positive relationship between workplace exposure to SHS and short-term health effects such as respiratory and sensory symptoms.

In conclusion, respiratory and sensory symptoms were consistently and significantly associated with SHS exposure in the workplace. Because respiratory symptoms are common and may adversely affect functional status, quality of life, and the use of health care resources, the relationship between respiratory symptoms and second hand smoke exposure has substantial relevance to clinical care, to public health, and to the general comfort of non-smokers[16]. Eliminating or reducing second hand smoke exposure will likely decrease the occurrence of acute respiratory symptoms. These findings strongly support smoke-free policies, especially in hospitality venues in which SHS exposure is high. Studies have shown that implementation and compliance to smoking bans in restaurants, bars and pubs, have resulted in a reduction of exposure to second hand smoke[17]. Study findings showed that partial smoking bans do not work because intensity of exposure to second hand smoke among workers and patrons remain high. Implementation and enforcement of smoke-free policies should be strengthened in

Malaysia to protect both workers as well as the public. There should also be a total smoking ban in restaurants, bars and pubs.

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ID Interviewer: ☐-☐☐

APPENDIX (QUESTIONNAIRE)

SURVEY OF RESTAURANT WORKERS IN PENANG, MALAYSIA

NAME OF PLACE:_____

LOCATION: _____

_____

DATE: _____/_____/_____

BACKGROUND INFORMATION

1 What is your current position at this restaurant?

- [1] Manager
- [2] Assistant Manager
- [3] Captain /supervisor
- [4] Chef
- [5] Waiter/waitress
- [6] Others (specify:_____)

2 Number of years working in current place

_____ **(years)** _____ **(months)**

3 a) How many working days per week?

- [1] 1 day
- [2] 2 days
- [3] 3 days
- [4] 4 days
- [5] 5 days
- [6] 6 days
- [7] 7 days

b) Average number of hours per day working

_____ **(hours)**

4 a) Do you have shift work?

- [1] Yes **(Go to Q.4b)**
- [2] No

b) **If yes**, how long is the length of one shift?

_____ **(hours)**

5 When is the last off day?

- [1] None
- [2] 1 day ago
- [3] 2 days ago
- [4] 3 days ago
- [5] More than 3 days ago

6 Have you ever smoked?

- [1] Yes
- [2] No

7 Do you currently smoke at all?

- [1] Yes, smoke everyday
- [2] Yes, less than everyday, but at least once a week
- [3] Yes, less than every week
- [4] No, not at all

Note: If smoke everyday or at least once a week: respondent is ineligible to complete this survey

8 **If no**, when did you stop?

- [1] Less than a year ago
- [2] 1 – 2 years ago
- [3] 3 – 4 years ago
- [4] 5 – 6 years ago
- [5] 7 – 8 yeas ago
- [6] 9 – 10 years ago
- [7] More than 10 years ago

RESPIRATORY HEALTH

9 Respiratory symptoms in the **last 1 month**. Indicate whether any of the following have been present.

	Tick ☑ in appropriate box	
	[1]Yes	**[2]No**
a. Wheezing or whistling in the chest …… …….	☐	☐
b. Shortness of breath …….. ……	☐	☐
c. Cough during the day or night ……..	☐	☐
d. Phlegm ……	☐	☐
e. Others (specify: _____) ...	☐	☐

10 Eye, nose and throat irritation in the **last 1month**. Indicate whether any of the following have been present.

	Tick ☑ in appropriate box	
	[1]Yes	**[2]No**
a. Red or irritated eyes …… …….	☐	☐
b. Running nose, sore nose, sneezing ……	☐	☐
c. Painful or scratchy throat ……..	☐	☐

EXPOSURE TO SECONDHAND SMOKE

11 How many smokers do you live with?

1 None
2 One
3 Two
4 Three or more
5 Refused question

12 At work, how much of the time are you exposed to tobacco smoke close enough to smell the smoke)?

1 _____ (hours per day)
2 _____ (days exposed per week)
3 Not at all exposed to tobacco smoke

13 How often are you exposed to employees smoking (inside or outside) during break periods in the last week?

1 Yes, everyday
2 Yes, some days
3 Not at all
4 Unsure

14 How many people smoking during the peak time in your restaurant?

|_____|_____| *Enter number.*

15 In each of the following places, please tell me how many hours in a day and how many days in **last week** you are usually exposed to secondhand smoke, the smoke from someone else's cigarette, cigar, etc.

Place	Hours Exposed per day	Days Exposed last week
a) Home		
b) Public places		
c) Social setting (e.g. recreation)		
d) Other (specify:_____)		

16 Do you have asthma (doctor diagnosed)?

- [1] Yes
- [2] No

17 Do you have rhinitis (doctor diagnosed)?

- [1] Yes
- [2] No

18 How many times did you fall sick in the last 12 months?

- [1] None
- [2] Once
- [3] Twice
- [4] Three times
- [5] More than 3 times

19 How many days of sick leave did you take in the last 12 months?

- [1] None
- [2] Less than 7 days
- [3] 7 to 10 days
- [4] More than 10 days

20 How many doctor consultations did you make in the last 12 months?

- [1] None
- [2] Once
- [3] Twice
- [4] Three times
- [5] More than 3 times

21 Do you have any hospitalizations in the last 12 months?

- [1] None
- [2] Once
- [3] Twice
- [4] Three times
- [5] More than 3 times

22 What is your gender?

- [1] Male
- [2] Female

23 What is your age?

_____ (years)

24 What is your level of educational achievement?

- [0] No schooling
- [1] Lower elementary
- [2] Upper elementary
- [3] Lower secondary
- [4] Upper secondary
- [5] Pre-university
- [6] Diploma, certificate
- [7] Bachelor degree
- [8] Masters, PhD degree
- [9] Other (specify: _____)

25 What is your race?

- [1] Malay
- [2] Chinese
- [3] Indian
- [4] Others (specify_____)

RESTAURANT INFORMATION

26 Type of restaurant

- [1] Family restaurant
- [2] Fast food restaurant

3 Fine dining restaurant
4 Bar/Pub
5 Others (specify:_____)

27 Type of environment

1 Enclosed air-conditioned only
2 Enclosed air-conditioned & open air / outdoor

28 What is the seating capacity in this restaurant?

a) Number of seats indoor area: |_____|_____| *Enter number.*

b) Number of seats outdoor area: |_____|_____| *Enter number*

29 a) Is there a bar as part of this restaurant's operations?

1 Yes **(Go to Q.29b)**
2 No

b) **If yes**, Is the bar in a separate room from the restaurant?

1 Yes
2 No

30 Is there any indoor ventilation (exhaust fan) in this restaurant?

1 Yes
2 No

31 Which of the following best describes the smoking policy in this restaurant/bar?

1 Smoking is not allowed in any indoor area
2 Smoking is allowed only in some indoor area
3 Smoking is allowed everywhere
4 Don't know/unsure

32 Is smoking allowed in your outdoor seating area?

1 Yes
2 No
3 No outdoor seating area

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About SEATCA

The Southeast Asia Tobacco Control Alliance (SEATCA) works closely with key partners in ASEAN member countries to generate local evidence through research programs, to enhance local capacity through advocacy fellowship program, and to be catalyst in policy development through regional forums and in-country networking. By adopting a regional policy advocacy mission, it has supported member countries to ratify and implement the WHO Framework Convention on Tobacco Control (FCTC)

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