The attitudes and knowledge about second hand smoke of the staff and owners of bar and eating places

Report
for ASH, ATAK and the Smokefree Coalition

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TE WHARE WĀNANGA O OTĀGO

'*Ownership* a smoky premise appears to result in a much greater likelihood of having lower declared knowledge about the risks of second hand smoke.'
Page 18, Section 2.3.2 of this report

The reduction of exposure to SHS for indoor workers 'to near zero' by the year 2000 was a New Zealand government health target (Ministry of Health 1998b p.64)

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Summary

Background: An estimated 144 deaths per year in New Zealand are caused by second hand smoke (SHS) at work. Bar staff are amongst the workers most exposed to SHS.

Aim: To examine and discuss differences in the attitudes and knowledge about second hand smoke of staff, managers and owners in the Wellington hospitality industry.

Method: A face to face workplace survey of Wellington region bar and eating place bar staff, waiters, managers and owners was carried out during November 1999 – January 2000. The SAS procedure GLIMMIX was used for the single and multivariate analysis of the data, to allow for the clusters within interview locations.

Results
Data: 471 interviews were conducted at 378 locations (80% of locations approached). 435 interviews had full data and were used for the analysis.

Occupational differences: Staff were more likely to know about the health effects of SHS than managers. The staff of smoky places were more likely to know of the health effects compared to both owners and managers in smoky places. Owners and staff were much more likely than managers to want restrictions on smoking in bars.

Workforce differences: Full time workers were more knowledgeable about the effects of SHS than part time workers, and to want restrictions on smoking in bars. Those with up to five years in the industry were more likely to want restrictions on smoking in bars, compared to those with over five years in the industry..

Knowledge and attitudes: There was a strong correlation between knowing about the dangers of SHS and wanting restrictions on smoking in bars.

The extent of knowledge: Only 27% of the interviewees were sure about the increased risk from SHS for both strokes and heart disease, which together produce 97% of the estimated deaths caused by workplace SHS in New Zealand.

Attitudes: Over three-quarters of interviewees wanted some restrictions on smoking in bars. Females, those in un-licensed premises, non-smokers, those over 35 years of age and the more knowledgeable were more likely to want restrictions on smoking in bars.

Expectations of patronage after smoking restrictions: Owners who worked in smokefree places were much less pessimistic than those in smoky places about the effect of a *minimum* of one smokefree room in bars and taverns.

Perception of irritation from smoke at work: Of those exposed to SHS at work, over half reported irritation from the SHS, including 37% of the smokers. The majority of managers and bar and waiting staff reported irritation, as did 47% of owners.

Discussion: The survey gave a picture of an industry that had a very incomplete knowledge of the health effects of second hand smoke. This apparent low knowledge indicates that the workforce and owners are not in a good position to decide on

smokefree policies. It indicates the need for government to intervene to protect workers and patrons.

The consequences of the knowledge levels about SHS
The declared knowledge levels can be used to argue that:

- Those who admit knowing about the dangers of SHS are much more likely to want smoking restrictions – i.e. *being exposed to, absorbing and accepting information on SHS is crucial to industry support for restrictions.*
- Owners of smoky places as a group are even less likely than other hospitality industry staff to be well suited to influence policy on smokefree places.
- Targeted and effective information programs on SHS are urgently needed for all the industry, and particularly for the lower-knowledge groups.
- In the absence of an informed workforce, legislation is needed to protect workers and patrons.

Recommendations

1. That government and non-government agencies urgently address the need for health promotion programs for New Zealand on the risks of and policies for second hand smoke.
2. That such programs are designed both for the general public and for specific groups within the hospitality industry.
3. That these programs particularly highlight:
    - The harmful effects of secondhand smoke.
    - The particular vulnerability of workers in the hospitality industry.
    - The positive experience of smokefree restaurants and bars in New Zealand.
    - The practicality and positive experience of smokefree bar laws elsewhere.
    - The disparity between the industry perception of the public's wishes, and the actuality.

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1 Introduction

1.1 Background

Definition: Second hand smoke (SHS) is also known as environmental tobacco smoke (ETS). SHS is made up of both smoke from burning ends of cigarettes and smoke exhaled by smokers. 'Passive smoking' occurs when people in a smoky places involuntarily breathe in SHS.

The health and social effects of smoking and second hand smoke
Over 4500 people die in New Zealand from smoking each year (Peto, Lopez et al. 1994), making it the largest cause of preventable illness and death in New Zealand (Galgali, Beaglehole et al. 1998). The New Zealand costs of smoking have been estimated to include over 1.5% of GDP and 3% of human capital annually (Easton 1997). SHS is a further significant health problem (Woodward and Fraser 1997). Over 140 premature deaths a year are due to workplace exposure in New Zealand to second hand smoke (Woodward and Laugesen 2000 p.2). This does not count the effect of SHS on active smokers, or on those only exposed at tea breaks.

The relevance of SHS for bars and restaurants
Bars, cafes and restaurants are the highest profile remaining New Zealand public areas that do not have effective smokefree policies. They are over five times more likely than any other type of public or private place to be perceived as having the highest levels of smoke (National Research Bureau 1996 p.25).

The exposure to second-hand smoke makes the bar and eating place area dangerous for the staff and working owners. Working in an environment where smoking is allowed also helps normalise the activity for those involved, particularly the large proportion of young people who work in the area. Their age is significant, as the period between the ages of 15 and 19 is one where the commitment to smoking occurs for the majority of smokers (Ministry of Health 1998a pp.107-108). It also makes it more difficult for the staff who are trying to quit to do so.

Smoking in bars also has an importance far beyond the effect on the staff involved. Making bars smokefree could help the efforts of those trying to give up or cut down on smoking. At present cessation advisers recommend that those trying to give up and stay non-smokers avoid bars, which cuts across the social norms of many high smoking prevalence groups. Furthermore, smoking in bars and eating-places is one of the major remaining factors in the normalisation and social legitimisation of smoking within the community. The association of smoking with alcohol also reinforces the adult image of smoking for youth.

The legal position for smoking in bars and restaurants
Cafes and restaurants in New Zealand are only required to have a smokefree room where there is more than one room. Licensed premises that are not eating-places are not required to have a smokefree room (1990 s.12,13).

Overseas research on attitudes to and knowledge about SHS
The literature from other countries indicates that attitudes about SHS are related to knowledge, and knowledge is related to smoking status. Poland et al (Poland, Cohen et al. 2000) suggest from Canadian evidence that for both smokers and non-smokers their attitudes on restrictions on smoking are related to knowledge about the health effects of SHS, with more knowledge leading to more support for restrictions. Glantz and Jamieson (Glantz and Jamieson 2000) found that for those aged 14-22 in the United States, non-smokers appeared more knowledgeable about SHS than smokers, and that knowledge of the dangers of SHS was a predictor of having stopped smoking.

Australian research has indicated that those who declare a low knowledge about the risks of SHS are more likely to have low formal educational levels, and to work in places without smokefree policies (Makkai, McAllister et al. 1994). Gender, age, educational level, employment status and smoking status were related to the ability to name specific illnesses made more likely by SHS.

Other New Zealand research on attitudes on smokefree hospitality industry venues
Surveys have been conducted on the attitudes to smoky environments, passive smoking and possible restrictions in various New Zealand settings (National Research Bureau 1996) (National Research Bureau 1999) (CM Research NZ Ltd 1999). The results are reported in section 2.3.5 below.

A published survey of the hospitality industry (Reeder and Blair 2000) examined the attitudes of Dunedin licensees and managers of licensed premises. The article reported a high level of concern by those surveyed about the effect on business and the enforcement of any new restrictions on smoking. A survey of New Zealand Restaurant Association members (Anon 2000a) indicated a small majority supported a smoking ban in dining areas, but 68% wanted no restrictions in bars. However 83% thought that a ban on restaurants but not bars would be unworkable.

Other background to this report: There has not been any major education campaign by the New Zealand government about the dangers of SHS within the last ten years. There has been no litigation in New Zealand based on the dangers of smoking, let alone the dangers of SHS (Tokeley 1997). The enforcement of the New Zealand occupational safety legislation has appeared to bypass concerns about SHS in bars and eating places. The Occupational Safety and Health Service does not appear to have been active in the area (Wilson 2000a) although this may be changing (Maling 2000).

The position of New Zealand bar and eating place staff is in the context of a strong relationship between smoking and socioeconomic deprivation. There is also a strong relationship between being Maori and smoking, above the socio-economic deprivation (Crampton, Salmond et al. 2000). Furthermore, there are arguments that for workers the degree of risk in the workplace has strong social determinants. Those less able to demand good working conditions tend to be the more socioeconomically deprived (Nichols 1999).

This report arose from a concern that the knowledge and attitudes of owners and managers within the New Zealand hospitality industry might be a factor in the

continued lack of smokefree policies in much of the industry. That lack of smokefree policies puts workers and patrons at risk, and affect the wider community and economy.

This report is a companion volume to one on the relative knowledge of and attitudes to second hand smoke (SHS) for Maori owners, managers and staff in the New Zealand hospitality industry (Thomson 2001).

1.2 Project aim and objectives

Aim: To examine and discuss the differences in the attitudes and knowledge about second hand smoke of staff, managers and owners in the Wellington hospitality industry.

Particular objectives

1. To see if owners and/or managers have significantly different attitudes to or knowledge of second-hand smoke from bar and waiting staff.
2. To see if length of service in the industry affects attitudes or knowledge.
3. To see if full-time/part-time status affects attitudes or knowledge.
4. To examine any relationships between the knowledge of groups and their attitudes.
5. To briefly discuss the implications of the findings for the success of new smokefree environments legislation in these areas, giving options and recommendations.

1.3 Methods

1.3.1 Research issues

The research issues arising from investigations of attitudes and knowledge within the hospitality industry include:

- The design of the questions asked – does the design affect the answers. This is discussed in section 3.1 below.
- The differences between the responses to questions from within the industry and from the general public.
- The concept of 'knowledge' used. In this survey knowledge was tested by a range of questions. This approach assumes that the comprehension of information is a complex matter, and that a range of specific questions is necessary to gauge the general understanding by interviewees of an area of knowledge. In other words, knowledge about the risks of SHS is rarely a question of 'all or none', but a matter of degree.

1.3.2 The source of data for this report

A survey of 471 Wellington region bar and eating-place staff and owners was carried out in the summer of 1999 – 2000 (Jones, Love et al. 2001). There were sufficient owners (112 or 24%) and managers (148 or 31%) for some comparisons to be made with the bar and waiting staff interviewed. That survey arose from consultation on the research needs of official agencies and health advocacy groups concerned with tobacco control.[1] These agencies and groups identified bars and restaurants as a major gap in public smokefree environments, with consequent direct severely adverse health effects. They also commented on the normalisation of smoking by these high profile public places.

The design of the survey questionnaire

The survey questionnaire (see Appendix Four) was designed to probe the level of knowledge about the effects of second hand smoke, the attitudes to that smoke, and the demographic variables and other background of the interviewees and their workplaces. To provide that background the questions included the length of time worked in the industry, the current job description, age, gender, ethnicity and smoking status. Ethical approval for the project was received from the Wellington Ethics Committee.

As far as possible, the questions were compatible with similar surveys (eg. (National Research Bureau 1999); (Al-Delaimy, Luo et al. 1999). The 1999 NRB survey of the public for the Ministry of Health probed attitudes to smokefree bars offering a range of options for restrictions, and this range was adopted for the bar and restaurant survey (see Question 5 in the Appendix Four below). The 1997 survey of the public by Al-Delaimy et al used questions on five health effects of SHS, and this has been followed substantially (see Question 11 and 12 in the Appendix Four below).

[1] This consultation during 1999 was with the Ministry of Health, the Health Funding Authority, the Health Sponsorship Council, the Smokefree Coalition, Aparangi Tautoko Auahi Kore (ATAK), the Cancer Society, ASH NZ, the Heart Foundation and Te Hotu Manawa Maori.

There was a need to keep the interviews brief, because they took place within the interviewee's working day. The number of questions was limited to 26, with a usual interview time of under five minutes. After the first half of the surveys were completed the optional answers for question 5 (which gave a number of options for smokefree regulations in bars) were reversed in order to prevent bias.

Definitions for the survey results

- 'Owners' - are those who included the word 'owner' in their self-description (eg owner/manager, co-owner/bar staff)

- 'Managers' - are those who defined themselves in some way as managers, except for those who were also owners (eg manager/waiter)

- 'Waiters and bars staff' - are those who did not include the word owner or manager in their self-description of their occupation.

- 'Maori' - in the text below means those who, when asked the survey question

  '*which ethnic group or groups do you identify with*?'

  answered 'Maori' as the group or *one of the groups*. Thus 'non-Maori' were those who did not mention Maori as the group or one of the groups with whom they identified with. This hierarchical method is used by the New Zealand Census of Statistics New Zealand (Statistics New Zealand 1997a).

- 'Smoker' – those who smoke one or more tobacco cigarette per day or the equivalent in pipe or other tobacco. The sale of chewing tobacco is outlawed in New Zealand, and its use in this country appears to be limited to the possible occasional overseas tourist.

- 'Ex-smoker' – those who do not smoke now, but in the past smoked one or more tobacco cigarette per day or the equivalent in pipe or other tobacco.

- 'Never smoker' - someone who has never smoked tobacco at all or smoked less than one per day.

- 'Non-smoker' – ex-smokers and never smokers.

- 'Part-time' employment - working less than 30 hours per week within the hospitality industry.

Sample recruitment for the survey

Location
During November 1999 a list of all licensed premises and a list of all eating places within the Wellington area (including Hutt Valley and Porirua) was obtained from the Wellington City Council, Hutt City and Upper Hutt Councils. Each list was numbered, and random number tables were generated to determine the selection of locations for interviewing. The lists were checked to ensure that eating places that were licensed were not counted twice.

Clubs were included in the survey if their bar or restaurant area provided a service for greater than 20 hours per week (calculated on a year round basis) and where paid bar and waiting staff were employed. This criterion was selected as including the larger clubs with a greater patronage, which were more comparable to commercial businesses. The criteria excluded the smaller places, particularly those with voluntary staff. Clubs were phoned beforehand, and if they did not meet the survey criteria were excluded from inclusion in the survey.

Table one: Locations for survey interviews

Locations Approached	Location refusals	Locations with interviews	Locations with interviews used for multivariate analysis (cluster data available)	Wellington City locations with interviews used	Hutt locations with interviews used	Porirua City locations with interviews used
472	94 (20%)	378	364	271	116	48

Table two: Interviews

Interviews started	Interviews completed	Interviews with location recorded	Interviews used from locations with one interview	Interviews used from locations with 2 or 3 interviews	Interviews from licensed premises	Interviews from unlicensed premises
472	471	435	305	130	258	177

Interviewees
At the selected locations a staff member behind the counter or bar was approached first and the survey was explained to him/her. The interviewers introduced themselves as from the Wellington School of Medicine, seeking interviewees' opinions on smoking in workplaces. The confidentiality of the information was assured. The interviewer then asked if it was possible to interview a member of the staff.

The decision of who was interviewed was made primarily by the duty manager, based on who was free to be interviewed at the time and who volunteered to be interviewed. Thus refusals occurred only at this preliminary stage, rather than later at the stage of individual interviewees. Self-selection was therefore possible within locations. If a location refused to take part in the survey the next eating house or licensed premises

located by the interviewer on her right (when exiting from the location refused) was selected for interviewing.

The intention was to interview those who worked in the public areas of the locations, and so those who were waiting or bar staff were selected, rather than those only working in the kitchens (where they were separate from the public areas). Of the 472 interviewees only one withdrew after the interview had begun.

Interview Process
The two interviewers were recruited from medical students available for work during the summer holidays. The interviews were conducted from November 1999 through to January 2000. The questionnaire was filled in by the interviewer. The number of staff members working at the time of sampling was recorded on the questionnaire, as was the number of interviews per location.

Following the first interview at each location the interviewer asked if any other staff member was able to complete the survey. A maximum of three staff members was interviewed at each location. However usually only one staff member was interviewed, and there was an average of 1.2 interviews per location. These locations with more than one interview had an average of 4.5 staff working at the time, compared to an average of 3.7 for locations where only one interview took place.

Response rate
Interviews were obtained at 80% of the locations that were approached.

Data entry and data cleaning
The data was entered into EpiInfo by the interviewer. When analysis showed that data from particular questions had not been entered from the questionnaires, this was done. The data was also checked to ensure that there were no incompatible entries (for instance that the number of interviews *entered* for each location was the same for all the interviews for that location). Where inconsistencies were found, the questionnaires were checked and incorrect data entries corrected.

1.3.3 The analysis methods used for this report

Data from the bar and eating place survey on occupation was matched against demographic and workplace information and answers on knowledge, perception and attitudes. The demographic and workplace data was analysed by EpiInfo, finding the percentages of groups answering particular questions and the statistical significance of the numbers

To find the relationships between knowledge about SHS, attitudes to SHS and other variables, analysis was done using the SAS program Version 8, comparing variables both one at a time and together.

The variables of interest
The seven variables used to test knowledge and attitudes were the knowledge of SHS effects on health:

1. increased risk of shortened life,
2. increased risk of cancer
3. increased risk of strokes
4. increased risk of heart disease
5. increased risk of asthma

and

6. attitudes to smoking restrictions and
7. pessimism about patronage after restrictions.

Logistic regression tests
These seven variables were tested against all or some of the following variables. Age, gender, smoking status, part time/full time status, length of time in the industry, smoky or smokefree workspace, licensed status of workplace, attitude to smoking restrictions in bars, pessimism about patronage, and occupational position.

Such tests compensate for the disproportionate numbers of particular groups. So for instance there was a greater proportion of the managers who were from licensed premises than in the whole sample of interviewees, and a greater proportion of the owners who were in non-licensed premises. While 60% of the whole sample worked in licensed premises, 71% of the managers interviewed were in licensed premises and only 50% of the owners.

The use of the multivariable analyses
Where there was a statistically significant relationship found, the odds ratio for the relationship was examined. Except for two cases, odds ratios over 7 were taken to indicate that an excessive degree of correlation between variables was occurring. One exception was for the relative knowledge between managers and owners in smoky places about the effect of SHS for cancer. This was in line with the very high polarity in knowledge by a range of groups about the effect of SHS on cancer. The second exception was for the difference between smokers and non-smokers in their attitudes to restrictions. Here the odds ratio for the single variable was very high also (18.12 for those exposed to SHS at work). The addition of the variables of age gave a similar odds ratio, and gender gave a unusable ratio.

To improve the analytic models the following deletions of variables from the multivariable tests were made:

- When testing for knowledge about the health effects of SHS, the high correlation between the *time working in the industry* and other variables meant that it could not be used.

- When testing for attitudes to restrictions in bars, the high correlation between other variables, *smoking status* and *pessimism about post-ban patronage* meant that these latter variables could not be used.

- When testing for pessimism about patronage after restrictions on smoking in bars, the high correlation between *attitudes against restrictions* and other variables meant it could not be used. This was when testing both the whole sample and those exposed to SHS at work.

- When testing for knowledge about the health effects of SHS amongst those exposed to SHS, the *time working in the industry*, *smoking status* and *attitude to smoking restrictions* all had to be deleted. When testing for knowledge about the increased likelihood of strokes when exposed to SHS, the *part time /full time status* had to be deleted. When testing for knowledge about the increased likelihood of cancer, only age and gender were used.

- When testing for attitudes to smoking restrictions in bars amongst those exposed to SHS, *the time working in the industry* and *pessimism about patronage* both had to be removed from the variables used.

- When testing for irritation from the SHS at work, no variables were removed (except of course the data for smoky or smokefree workspace).

Where variables were deleted from the multivariable tests, the results for single variable tests are shown for them and multivariate tests for the basic range of gender, age, and smoking status.

Checking the multivariable tests with single variable tests
Where significant results were found with multi-variable tests, this was also checked with SAS tests which only compared the two variables concerned. So, for instance, when the results showed that females appeared to know significantly less about the effect of SHS on asthma, then the relationship of gender and asthma knowledge was also tested *without* allowing for other variables. Where this not statistically significant the multivariable association was ignored.

Analysis of data for those exposed to SHS
The opinions and knowledge of those who were exposed to SHS (and thus currently at risk) could be considered the most relevant for this report. Therefore the logistic regression tests for the seven sets of answers above were also run *for only those exposed to SHS at work.* Thus the smokefree / smoky status of the workplace was no longer a variable, and only eight variables were controlled for.

Amalgamating groups of answers for regression tests
For these tests, where the questions had more than two answers these were reduced to two alternatives (except for occupational position). The reduction was as follows:

- *Age* – Up to 34 years of age / 35 years and over

- *Smoking status* - Smoker / non-smoker
- *Occupational position* – owner / manager / bar and waiting staff
- *Length of time in industry* – up to / over five years in the industry
- *Knowledge of the increased risk of shorter life from SHS* – sure / unsure of the increased risk (the latter for the answers 'no', 'possibly', 'probably' or 'don't know')
- *Knowledge of the increased risk of cancer, strokes, asthma* – sure / unsure of increased risk (from yes / no / don't know).
- *Attitude to restrictions for bars* – no restrictions / restrictions (from no restrictions / partial or full restrictions, and no opinion)
- *Pessimism about patronage after restriction* – decrease / other (from increase/ no difference / decrease / don't know)

Clusters

To counter any effect from having more than one interview in some locations (a statistical 'cluster'), the SAS procedure GLIMMIX was used. For 36 interviews the number of interviews in the same location was not recorded, and these were discarded, leaving data from 435 interviews (for 305 locations with one interview and 130 interviews from locations where there was two or three interviews).

Statistical significance

The results are described as 'statistically significant' when the possibility that a result is a chance one is less than 5%. This possibility is shown by an indicator known as the '*p* value'. For this project a *p* value of less than .05 is described as indicating statistical significance. The lower the number the greater significance, so a result with a *p* value of .002 is less likely to be a chance result than one with a p value of .02. The cut off point of .05 is arbitrary, but is standard in scientific literature.

2 Results

2.1 The demographic profiles of the sample interviewed

(The data in sections 2.1 and 2.2 was analysed by EpiInfo)

The sample showed an industry with generally younger, female bar staff and waiters, and with older, male managers and owners. Bar staff and waiters were more likely than managers and owners to be part time and to have worked in the industry for less than five years. The majority of part time workers were under 24 years of age and they were also much more likely to be female.

Owners were least likely to smoke, and managers and staff in licensed places the most likely to smoke. Amongst smokers there was a general pattern of heavier smoking (over 10 cigarettes per day) in owners, males and those in licensed premises.

For tables showing all the demographic and workplace variables by number and proportions, see Appendix One.

Gender

Fifty seven percent of managers were male and 55% of owners, compared to 36% of waiters and bar staff ($p<.001$). The pattern was similar in both licensed and non-licensed venues, although managers in non-licensed places were even more likely to be male (63%). Part time workers were much more likely to be female ($p=.013$).

Table three: Gender and position

	Owners	Managers			Bar/waiting staff	Total
		All	Licensed	Non-Licensed		
Female	45%	43%	46%	37%	64%	53%
Male	55%	57%	54%	63%	36%	47%

Ethnicity

Bar staff and waiters (58%) and managers (61%) were more likely to be Pakeha (New Zealand European) than non-Pakeha, but owners were more evenly split between Pakeha (47%) and non-Pakeha (53%). The ethnic spread for the whole survey sample is close to that for the whole population, in which 60% of those aged 15 and over are described as New Zealand European (Statistics New Zealand - Ethnicity and sex for the population resident in New Zealand, 1996).

Table four: Pakeha/Non-Pakeha self-identification and position

	Owners			Managers			Bar/waiting staff			Total
	All	Licsd	Non	All	Licsd	Non	All	Licsd	Non	
Pakeha	47%	55%	39%	62%	61%	63%	58%	61%	55%	57%
Non-Pakeha	53%	39%	61%	38%	39%	37%	42%	39%	45%	43%

Residence and electoral enrolment

Owners and managers were much less likely to have moved their address in the last year. Only 29% of owners reported having moved, compared to 42% of managers (47% in licensed premises) and 55% of bar and waiting staff (62% in licensed

premises) (p<.001 for the whole sample). Owners were slightly more likely to have enrolled on the Electoral Roll, but this was not statistically significant (90% compared to 83% for others – p=.057).

Length of time in the industry
There was a strong relationship between position and length of time in the industry. Owners were much more likely to have been in the industry for over 10 years – 41% compared to 24% of managers and 12% of bar and waiting staff. Managers were much more likely than others to have been in the industry for between five and ten years – 28% compared to 13% for owners, bar staff and waiters.

For more detail on the demographics of the interviewee sample, see Appendix One.

2.2 Exposure to second hand smoke at work

Managers appeared to be a little more likely to be exposed to SHS at work (67% compared to 58% for others, although this was not statistically significant (p=.062). Those in licensed places were much more likely to be exposed to SHS at work compared to those in un-licensed places. Seventy seven percent of those in licensed places were exposed to SHS compared to 34% in unlicensed places (p<.001). There were no statistically significant differences in exposure for males and females in different positions, although only 52% of female owners were exposed to smoke compared to 65% of males.

Smokers were much more likely to report second hand smoke at work. Only 53% of the ex-smokers interviewed worked in smoky places, compared to 56% of never smokers and 67% of smokers (p=.011). Women in smokefree places appeared to be more likely to have given up smoking, with 24% of them being ex-smokers compared to 13% in smoky places (p=.034).

There was little difference in exposure for full-time and part-time workers, with 61% of the former and 55% of the latter exposed. Fifty seven percent of those in the industry for up to five years were exposed to SHS at work, compared to 63% of those in the industry for over five years.

2.3 Knowledge about the effects on health of SHS

2.3.1 The range of knowledge about the health effects of SHS

The survey showed a workforce whose knowledge about the health effects of SHS was very incomplete, with only four percent of the interviewees appearing to be sure of all the seven health effects asked about. Smokers, part time workers and those against restricting smoking in bars were likely to know less about more than one of the health effects of SHS. The groups who were showed significantly less knowledge about at least one of the health effects of SHS are show in the table below:

Table five: Groups significantly less knowledgeable about at least one of the effects of SHS

	From all interviewees	**From those exposed to SHS at work**
Managers	Less knowledgeable than staff about one effect	Less knowledgeable than owners about one effect
Owners		Less knowledgeable than staff about one effect
Smokers v non-smkr	Less knowledgeable about 3 effects	Less knowledgeable about 1effect
Females v males	Less knowledgeable about one effect	Less knowledgeable about one effect
Part time workers v full time workers	Less knowledgeable about 2 effects of SHS	Less knowledgeable about one effect of SHS
Those against smoking restrictions v those for	Less knowledgeable about 2 effects of SHS	Less knowledgeable about 2 effects of SHS
Those working in smoky places v those in smokefree places	Less knowledgeable about one effect of SHS	
Pessimistic on post-restriction patronage v not pessimistic		Less knowledgeable about one effect of SHS
Up to 35 years of age	Less knowledgeable about one effect	Less knowledgeable about one effect
Over 35 years of age	Less knowledgeable about one effect	Less knowledgeable about one effect

Those over 35 were more likely to know about the effect for strokes compared to those up to 35. Those up to 35 were more likely to know about the effects for asthma compared to those over 35.

Below are tables giving the statistical significance of the relationships about knowledge. Other statistical information - the odds ratios and confidence intervals for the single and multivariable tests - are shown in Appendix Two.

2.3.2 The differences in knowledge for occupational groups

Managers appeared to have a significantly lower knowledge of the effects of SHS for asthma, compared to bar and waiting staff.

For those who were exposed to SHS, 34% of owners were sure of the effect of SHS on life length, compared to 52% of managers and 58% of staff (p=.010 for the combined comparison). Thus *ownership* a smoky premise appears to result in a much greater likelihood of having lower declared knowledge about the risks of second hand smoke.

Amongst smokers, the contrast between owners and non-owners was even stronger. Only 18% of owners were sure of the effect of SHS on life length, compared to 43% of managers and 49% of staff (p=.016 for the combined comparison).

Managers of smoky premises were less knowledgeable than owners about the effects of SHS for cancer. See table six, seven and eight below.

Table six: The knowledge of owners, managers and bar/waiting staff ***exposed to SHS***

	N	%	*p* value 1 variable	*p* value 4 variables	*P* value 6 variables
Owners knowing the effect of SHS for life length	21	34%	p=.034 #	p=.037#	
Managers knowing the effect of SHS for life length	46	52%			
Staff knowing the effect of SHS for life length	63	58%	p=.007~	p=.009~	p=.041~
Owners knowing the effect of SHS for cancer	46	74%	p=.003#	p=.002#	p<.001#
Managers knowing the effect of SHS for cancer	55	62%			

p value for the comparison between owners and managers
~ *p* value for the comparison between owners and staff

Table seven: Variables significantly related to the probability of lower declared knowledge in both single and seven variable tests
(*p* value for multivariable comparison)

	Lower knowledge of the effects of SHS for -				
	Life length	Asthma	Cancer	Strokes	Heart
Female compared to male		p<.001			
Managers compared to staff		p<.001			
Smoker compared to non-smokers	p<.001		p<.001		
Part time workers v full time			p=.019	p=.006	
Working in smoky place v smkfree				p=.047	
Against any smoking restrictions					p=.035
Under 35 years of age v over 35				p=.003	
Over 35 years of age v up to 35		p<.001			

Table eight: ***For those exposed to SHS at work****, variables significantly related to probability of lower declared knowledge in both single and multivariable tests*
(*p* value for six variable comparison)

	Lower knowledge of the effects of SHS for			
	Life length	Asthma	Cancer	Strokes#
Female compared to males			p=.004	
Managers compared to owners			p<.001	
Owners compared to staff	p=.041			
Pessimist about post-restriction patronage compared to non-pessimists		p=.030		
Over 35 years of age v up to 35 years		p=.035		
Up to 35 years of age v over 35years				p=.001

In the test for knowledge about the effect of SHS for strokes, part-time /full-time status was deleted as a variable due to its high co-relation to other factors.

Smokers appeared to have sharply lower knowledge of the health effects of SHS, compared to non-smokers.

Table nine: The knowledge of smokers and non-smokers
(*p* value and odds ratio from SAS single variable test)

	N	%	*p* value	Odds ratio
Smokers knowing the effect of SHS for life length	73	42%	p<.001	2.47
Non-smokers knowing the effect of SHS for life length	164	63%		
Smokers knowing the effect of SHS for asthma	131	75%	p=.020	1.84
Non-smokers knowing the effect of SHS for asthma	221	85%		
Smokers knowing the effect of SHS for cancer	99	57%	p<.001	3.07
Non-smokers knowing the effect of SHS for cancer	208	80%		
Smokers *exposed to SHS* knowing the effect of SHS for cancer	69	58%	p<.001	6.87
Non-smokers *exposed to SHS* knowing the effect for cancer	110	79%		

2.3.3 The differences in knowledge for length of service and full time/part time status

Workers with over 5 years in the industry were more likely to know about the effect of SHS for strokes. However this appears to have been due to them being older, as a multivariate analysis also including age and gender showed that only age was a significant factor (p=.002). In that analysis the time in the industry was no longer even weakly related to knowledge.

Table ten: The knowledge of those with up to and over 5 years in the industry
(*p* value and odds ration from SAS single variable test)

	N	%	*p* value	Odds ratio
Those in industry over 5 yrs knowing the effect of SHS re strokes	64	36%	p=.029	1.67
Those in industry < 5 yrs knowing the effect of SHS for strokes	71	27%		

Part time workers appeared to have a lower knowledge of the effects of SHS for strokes and cancer, compared to full time workers. Amongst those exposed to SHS at work, they were less knowledgeable than full time workers on the effects of SHS for strokes.

Table eleven: The knowledge of part time and full time workers
(*p* value and odds ration from SAS single variable test)

	N	%	*p* value	Odds ratio
Full time workers knowing the effect of SHS for strokes	112	33%	p=.038	1.80
Part time workers knowing the effect of SHS for strokes	23	23%		
Full time workers knowing the effect of SHS for cancer	246	73%	p=.020	1.77
Part time workers knowing the effect of SHS for cancer	61	61%		
Full time workers *exposed to SHS* knowing effect for strokes	59	29%	p=.014	3.48
Part time workers *exposed to SHS* knowing effect for strokes	8	15%		

2.3.4 The relationship between knowledge of the health effects of SHS and attitudes

Those who were against restricting smoking in bars appeared to have lower knowledge compared to those who were in favour of restrictions.

Table twelve: The knowledge of those for and against restrictions on smoking in bars (*p* value and odds ratio for the differences from SAS single variable test)

	N	%	*p* value	Odds ratio
For restrictions knowing the effect of SHS for strokes	111	34%	p=.049	1.72
Against restrictions knowing the effect of SHS for strokes	24	23%		
For restrictions knowing the effect SHS for cancer	243	74%	p=.016	1.79
Against restrictions knowing the effect of SHS for cancer	64	61%		
Exposed to SHS for restrictions knowing the effect for asthma	153	81%	p=.020	2.85
Exposed to SHS against restrictions knowing the effect for asthma	50	70%		
Exposed to SHS for restrictions knowing the effect for cancer	139	74%	p=.001	4.61
Exposed to SHS against restrictions knowing the effect for cancer	40	56%		

2.3.5 The proportion of the interviewees with relatively good or bad knowledge

(The analysis in this section and section 2.3.6 was by EpiInfo)

Only 4% (21 of 435) of the interviewees were sure about the health risks from SHS for all the seven questions asked. Those questions were:

- 'Do you think that other people's tobacco smoke in the air can shorten people's lives?
- Does SHS increase the risk of the following illnesses - asthma, cancer, strokes, heart disease, breathing problems, cot deaths of babies?

Only 118 (27%) were sure about the increased risk of both strokes and heart disease from SHS. These effects produce 97% of the estimated deaths caused by workplace SHS in New Zealand (Woodward and Laugesen 2000).

Only 23% (102) answered 'yes' or 'probably' to the question on life length and also 'yes' to the question on cancer. At the other end of the spectrum was a group of 66 (15%) who answered 'no', 'possibly' or 'don't know' to the question on life length, and 'no' or 'don't know' on the question on cancer

Table thirteen: Low and high knowledge groups

	Smoky places	Smokefree places	Part time workers	Full time workers	Smokers	Non-smokers	All
Sure on life and cancer effects of SHS	22%	25%	25%	23%	15%*	29%*	23 %
Unsure on life and cancer effects of SHS	16%	14%	22%	13%	22%*	11%*	15 %

(*Statistically significant difference between the smokers and non-smokers in both high and low knowledge groups)

2.3.6 Other significant differences in knowledge about SHS between groups

Perception of irritation and knowledge
Of the owners of smoky places, 75% of those who reported being irritated by SHS were sure of the risk from SHS of shorter life, compared to the 25% of those who were *not* irritated (p=.014).

Smoking rates and knowledge:
Being a lighter smoker related to a greater declared knowledge compared to heavier smokers. Over half (51%) of those smoking 10 or less cigarettes per day were sure that SHS could shorten people's lives, compared to 33% of those smoking more (p=.009).

2.3.7 Knowledge of SHS effects by the public compared to the hospitality industry

There are some differences between the levels of knowledge found in the hospitality industry survey and a survey of the public. A 1997 survey of 200 private telephone respondents aged 18 years or over in the Wellington area (Al-Delaimy, Luo et al. 1999) used the same or similar questions. It found significantly different knowledge of the effects of SHS for asthma and cot death compared to this bar and eating place (see Table fourteen below). The 1997 survey used the word 'respiratory' instead of 'breathing' and this may account for the difference between the survey results for that question.

Table fourteen: Comparison with a public survey about the health effects of SHS
Note: The 1997 survey used the word 'respiratory' instead of 'breathing'

Question	Bar and eating place survey 1999-2000	Public survey 1997
Does breathing other people's smoke increase the risk of:	Percentage answering 'Yes'	Percentage answering 'Yes'
Asthma	80%	60%
Cancer	69%	76%
Heart disease	61%	57%
Breathing/respiratory problems	92%	58%
Cot death	53%	69%

2.4 Perception of irritation from second hand smoke at work

The results in this section are for interviewees who reported smoke in the air at work. Fifty two percent of those interviewees reported irritation from the SHS at work. Those for restrictions on smoking in bars, full time workers and non-smokers were much more likely to report irritation.

Table fifteen: Variables significantly related to probability of reporting irritation from the SHS at work by both single variable and multivariable tests
(*p* value and odds ration from SAS multivariable test)

	N	%	*p* value	Odds ratio
Smokers reporting irritation from SHS at work	44	36%	p<.001	4.03
Non-smokers reporting irritation from SHS at work	93	64%		
Part time workers reporting irritation from SHS at work	23	42%	p=.032	2.35
Full time workers reporting irritation from SHS at work	114	55%		
Against restrictions, reporting irritation from SHS at work	26	36%	p=.031	2.14
For restrictions, reporting irritation from SHS at work	111	58%		

2.5 Attitudes

2.5.1 Should bars have restrictions on smoking?

Seventy six percent of the interviewees wanted some restrictions on smoking in bars. In looking for differences in the attitudes to restrictions, all the variables except position, licensed status of the workplace and the smokefree status of the workspace were significant. When using both single and multivariable tests those under 35, part timers, those over five years in the industry and males were less likely to want restrictions. Because of the high correlation with other variables, smoking status and pessimism about patronage after smoking restrictions could only be tested by single variable tests. Smokers and those pessimistic about post-restriction patronage were also less likely to want restrictions on smoking in bars.

The groups who were more and less likely to want no restrictions on smoking in bars are show in table sixteen below. Further statistical information – the odds ratios and confidence intervals – are shown in the tables in Appendix Three.

2.5.2 The attitudes of occupational groups

Managers were less likely to want restrictions than both owners and staff, although this was not statistically significant for the multivariable test for the manager-staff relationship. See table sixteen below.

2.5.3 The differences in attitudes for length of service and full time/part time status

Those in the industry for over five years were much more likely to be against any restrictions on smoking in bars. This was so for both the whole sample and only those exposed to SHS at work. Part time workers were more likely to want no restrictions. See table sixteen below.

Table sixteen: Those more and less likely to want no restrictions on smoking in bars

	N	%	1 variable	Allowing for 3 variables @	Allowing for 6 or 7 variables *
Males wanting no restrictions on smoking	62	30%	p=.004		p=.008
Females wanting no restrictions on smoking	43	19%			
Managers wanting no restrictions on smoking	43	32%	p=.004		p=.021
Owners wanting no restrictions on smoking	20	19%			
Managers wanting no restrictions on smoking	43	32%	p=.004		p=.065#
Staff wanting no restrictions on smoking	42	21%			
Smokers wanting no restrictions on smoking	65	37%	p=<.001	p=<.001	
Non-smokers for no restrictions on smking	40	15%			
Pessimistic about patronage after restrictions	76	32%	p=<.001	p=<.001	
Not pessimistic on patronage after restrctions	29	15%			
In industry to 5 years wanting no restrictions	55	21%	p=.002		p=<.001
In industry over 5 years for no restrictions	50	28%			
Full time workers wanting no restrictions	21	21%	p=.006		p=.005
Part time workers wanting no restrictions	84	25%			
Under 35 years of age for no restrictions	77	26%	p=.039		p=.013
Under 35 years of age for no restrictions	28	20%			
Smokers *exposed to SHS* wanting no restrictions on smoking	21	38%	p=<.001	p=<.001	
Non-smokers *exposed to SHS* wanting no restrictions on smoking	13	11%			
Pessimistic about patronage after restrictions *and exposed to SHS*	51	34%	p=<.001	p=<.001	
Not pessimistic about patronage after restrictions *and exposed to SHS*	20	19%			
In industry to 5 years wanting no restrictions *and exposed to SHS*	35	24%	p=.012		p=.039
In industry over 5 years wanting no restrictions *and exposed to SHS*	36	32%			
In licensed places wanting no restrictions *and exposed to SHS*	61	31%	p=.019		p=.044
In non-licensed places wanting no restrictions *and exposed to SHS*	10	16%			

@ These variables were tested with age and gender
* For those exposed to SHS at work the analysis was for 6 variables
# Not statistically significant

2.5.4 The differences in attitudes for high and low knowledge groups

There was a significant difference in the attitudes to smoking restrictions between those who were aware of the risk from SHS for all seven health conditions asked about and the rest of the interviewees. Those who were aware of all seven risks were twice as likely than the rest to want no smoking at all in bars (14% compared to 7% - p=.009). Those who were aware of all seven risks were over twice as likely than the rest to want stronger rather weaker smoking restrictions for bars (21% compared to 9% - p=.012). See table seventeen below.

For more detail on the attitudes of particular groups, see Appendix Three.

Table seventeen: High knowledge of SHS risks and attitudes to restrictions
(Percentages of groups who wanted restrictions)

	Wanted no smoking in bars	Wanted stronger restrictions
Aware of all seven risks	14%	21%
Others	7%	9%
Statistical significance of difference	p=.009	p=.012

2.5.5 The results from other surveys on attitudes to smoking restrictions in bars

In this survey of staff and owners, attitudes to smokefree bars were probed by offering a range of options for restrictions (see Question 5 in the Appendix Four below). Below is a comparison with 1999 NRB survey of the public for the Ministry of Health (National Research Bureau 1999) which asked the same question. That survey was of random private landline telephone respondents aged 15 years and over, stratified to ensure a geographic spread throughout New Zealand.

Table eighteen: Comparison of attitudes to smoking restrictions in bars

Opinion		Bar/eating place survey	NRB 1999
Have no restrictions		24%	19%
Have 50% of floor non-smoking		36%	28%
Have only in separate room		28%	41%
No smoking at all		9%	10%
No opinion		3%	2%
Total sample		471	2698

Another similar survey was by CM Research for the Health Sponsorship Council (CM Research NZ Ltd 1999 p.29). This asked 'should people be able to smoke in bars/pubs?'. The answers were – anywhere 27%, in set areas 45%, not at all 25%, don't know 3%. This was more restrictive compared to our survey of hospitality staff, where 24% wanted no restrictions, 64% only in set areas, and 9% no smoking.

2.6 Optimism or pessimism about patronage after smokefree restrictions

Opinion on whether a requirement for a minimum of one smokefree room in bars and taverns would increase or decrease patronage
There was little difference between occupational status groups.

- 7% of waiters and bar staff thought there would be a patronage increase, compared to 10% of managers and 7% of owners.
- 28% of waiters and bar staff thought that patronage would be the same, compared to 27% of managers and 31% of owners
- 54% of waiters and bar staff thought there would be a patronage decrease, compared to 59% of managers and 49% of owners
- 10% of waiters and bar staff didn't know, compared to 3% of managers and 12% of owners

The best predictor of pessimism about future patronage was the interviewee being against any restrictions on smoking in bars. Those up to 35 years of age and those in licensed premises were also more likely to be pessimistic.

Table nineteen: Variables related to pessimism about patronage after restrictions

	N	%	1 var'ble	3 variables *	6 or 7 variables #
Against any smoking restrictions	76	72%	p<.001	p<.001	
For restrictions	164	49%			
Up to 35 years of age	174	58%	p=.027		p=.0561~
Over 35 years of age	66	48%			
Working in licensed premises	157	61%	p=.004		p=.021
Working in un-licensed premises	83	47%			
Exposed to SHS, against any smoking restrictions	51	63%	p=.002	p=.002	
Exposed to SHS, for restrictions	100	43%			
Exposed to SHS, working in licensed premises	125	63%	p=.003		p=.004
Exposed to SHS, working in un-licensed premises	26	43%			

~ Not a statistically significant relationship
* These variables were tested with age and gender
# For those exposed to SHS at work, the smoky/smokefree place variable is of course removed.

3 Discussion

Before discussing the survey results for different occupational and other groups, the wider matter of the nature of the questions and the interview sample is addressed.

3.1 The importance of who answers the question, and what the question is

3.1.1 The range of answers

Fifty five percent of those interviewed in this survey thought that a minimum of one smokefree room in bars and taverns would decrease patronage. Only 9% wanted no smoking at all in bars, when given a range of options. These results might at first glance be thought to show little support for changes to smoking regulations by those within the industry.

Before jumping to conclusions from these results, we need to look at the complexity of the information beyond these two results. The complexity includes the range of opinion and optimism about smokefree restrictions and their consequences. This range of opinion and optimism varies by the gender, occupational group, smoking status, type and smokefree status of venue, and the declared knowledge of the interviewee, and will be discussed in the next section below.

We need also to remember that responses to survey questions depend on the way in which the question is cast and who is questioned. The answers in this survey were different from surveys of the general public, and from surveys where the questions are asked in different ways.

The slightly more restrictive opinions from the NRB and CM surveys (shown in section 2.5.5 above) may be due to the less youthful sample compared to the bar and eating place survey, or the opinion differences may be due to the mis-perceptions by those in the hospitality industry (discussed below).

3.1.2 Asking the question in a different way

The importance of context
Surveys where attitudes about smoking restrictions were probed while giving a context of the impact of SHS on workers find different results. So if the question is asked ‘should bar workers be protected from second hand smoke’ or ‘should bars be smokefree so as to protect workers from second hand smoke’, different results would be found from those from a question such as ‘do you want smokefree bars’. New Zealand examples of the responses from a question that includes the context of workers are:

- In the 1999 NRB survey 78% agreed that ‘smoking should not be allowed in any workplace where non-smokers have to work’ (National Research Bureau 1999 p.14) and 59% agree that ‘all workplaces should be entirely smokefree’ (p.12). This is in contrast to the 10% who thought that there should be no smoking in bars

at all (p.19), when given 'partial' smoking options (69% wanted 50% floorspace or separate rooms).

- In the 1999 CM Research survey for the Health Sponsorship Council (CM Research NZ Ltd 1999 p.29) 44% of all those surveyed said that people should not be allowed to smoke in workplaces, but only 25% said this for bars and pubs.

So adding a context that mentions the workers involved increases the positive response for smoking restrictions.

Using 'more, same or less' questions for prospective surveys of patronage
If in a survey the question is phrased as 'if all bars were smokefree would you go to bars more, the same or less', then different results are obtained compared to abstract questions about what *should* happen. For instance in a January 2000 survey commissioned by Philip Morris in Victoria, Australia, 43% of those surveyed would be more likely to attend smoke free bars. Eleven percent stated that they would be less likely to attend. For the remainder it made no difference. (Auspoll 2000 Tables 48,50).

Thus one could argue that 89% would attend more or the same, and over three times more would attend more than attend less. In contrast other questions in the survey (Tables 22-27) asked if control on smoking in a range of venues should tighter or looser (should be much tighter/tighter, about right, too tight/much too tight). Forty seven percent thought that controls on smoking in pubs should be tighter/much tighter.

So while 53% thought restrictions were too tight or about right, 89% would attend more or the same if bars were smokefree. The apparent contradiction is because a significant proportion would attend bars at the same rate if restrictions were much stronger, *even if* they thought restrictions at the moment were about right.

3.1.3 Hospitality industry mis-perceptions

Hospitality staff and owners could underestimate the wishes of their patrons and potential patrons for smokefree venues because they may tend to focus on the visible smokers in their clientele, rather than consider those (smokers and non-smokers) who are put off their premises by the smoke. These latter are less visible (unless they register their objections) and are more likely to be only discovered by surveys. Staff and owners may also underestimate the way patrons will accommodate themselves to restrictions.

Staff and owners also may not consider:
- That some of their *smoking* customers already would prefer smokefree places to socialise in.
- Most smokers will accept a public safety measure.
- Very few smokers will actually come less often, particularly if all workplaces are smokefree.
- More non-smokers will be inclined to go to previously smoky venues.

- With an across-industry smoking ban, non-smoking in hospitality venues becomes 'normal' and thus the whole frame of reference for patrons is different.
- After a ban, customers quickly find that it is more enjoyable to be in a smokefree place.

3.1.4 In summary:

- Different questions, with context about the rights of the workers involved, would have got more positive answers from those in this survey.
- Hospitality staff and owners may underestimate the desire of the public for smokefree venues, and the willingness of the public to accept smokefree policies.

3.2 The levels of knowledge about the effects of SHS

The survey gave a picture of a workforce that had a very incomplete and sometimes nil knowledge of the health effects of second hand smoke. Furthermore, part time workers, those against smoking restrictions in bars and smokers were less likely than others to report knowing about a range of the health effects.

Managers were significantly less knowledgeable than staff. Amongst those exposed to SHS at work, owners were less knowledgeable than staff. Heavier smokers (over 10 cigarettes a day) declared a lower knowledge than other smokers. These relationships between declared knowledge and the variables persisted when other variables such as attitudes, age and gender were controlled for.

In the crucial group who were at risk from SHS, the owner of a licensed premise appeared to be one of the least likely to declare knowledge about the dangers of SHS. Smoking owners also appeared markedly less knowledgeable than smoking staff.

3.2.1 Why do some groups appear to know less?

It must be remembered that the interviewee answers are a *statement* of knowledge, rather than more verifiable evidence. The apparent incomplete knowledge and differences in knowledge could be due to lack of *exposure* to information, lack of *absorption* of information, lack of ability to *comprehend* the information, or *avoidance, rejection, forgetting* or *denial* of the information.

Information exposure, absorption and comprehension
The different exposure to information about the health effects of SHS could be due to different media readership or viewing patterns, and other formal and informal education experiences. Some formal education may include information on smoking and SHS effects. Informal education could include discussions with friends and fellow-workers and observation of the effects of SHS has on those around them.

Those who are particularly concerned with the health of themselves, relatives or friends may be more likely to absorb relevant information about the effects of SHS. So asthmatics and others vulnerable to respiratory problems, parents of young children, and the children of smokers may be more likely to respond to information on SHS. The evidence that those irritated by SHS at work were far more likely to be sure of information on SHS appears to support this idea.

The comprehension of health information depends on the ability to place particular information items in context, and to proceed by inference or deduction from particular items to a more general understanding. So the knowledge that SHS increases the risk of strokes may not mean much to those who are hazy about the nature of strokes. The survey evidence indicates that older people are more able to put the idea of strokes into the context of their lives. They may be more likely to have friends and others of their generation who have had strokes. The knowledge that SHS can increase the likelihood of early death may have more meaning to those who relate this to the patterns of lower life expectancy of particular groups (eg Maori).

Avoidance, rejection, forgetting and denial of information
Have smokers, managers, and those who worked in licensed places been exposed to information about the dangers but been more likely to avoid, reject, forget or deny this information than others? Are heavy smokers more likely to reject health information than light smokers?

All these groups may not want to admit the reality of information and its consequences to themselves, because of their relative inability or disinclination to change their own circumstances. Most smokers find it difficult to contemplate or act towards a reduction or cessation of smoking. Heavy smokers find it more difficult than light smokers. Managers may be afraid of the financial consequences of acting on information about SHS effects, due to the mis-perceptions outlined above, and the lack of across-industry smoking restrictions. Those who work in smoky places (which are more likely to be licensed) could be resistant to the effort and costs of changing their workplace, particularly to a smokefree place.

Some of the evidence in section 2.3 appears to support these ideas. Owners of smoky places declared less knowledge than non-owners. A far smaller proportion of the owners of smoky places who reported *not* being irritated by SHS were sure of the risk from SHS of shorter life, compared to those who *were* irritated. There appears to be a link between admitting that SHS affects you, and admitting that it is a risk.

3.2.2 The consequences of the knowledge levels about SHS

It can be argued that those who didn't want restrictions on smoking *either*:
- were more likely to have low knowledge about second hand smoke effects, or
- were denying the knowledge they have about second hand smoke effects.

This ignorance or denial can be used to argue that:
- Targeted information is urgently needed for the low-knowledge groups.
- Government intervention is needed to protect workers and patrons, in the absence of the knowledge of the risks by a large proportion of the owners, or the denial of those risks by them.

Those who work in smokefree places were more knowledgeable and more able to see that smoking restrictions in bars were desirable and practical. This supports the evidence from both overseas and here that when smokefree policies are introduced, opinions change towards support and acceptance of them.

3.2.3 Ideas for policies to address the information needs

For many in New Zealand, second hand smoke is normal and familiar, and thus difficult to consider as dangerous. Because some of the lack of declared knowledge found in the survey may be due to such attitudes to second hand smoke, leadership may be needed at a very prominent level to accelerate the changes in knowledge for large populations within New Zealand. Such leadership could include the involvement of senior government and other leaders in activity to emphasise the dangers of second hand smoke.

Programs for those at risk
For the workers and owners exposed to SHS at work, it appears that particular education about the effects of SHS is needed for each of the groups who showed lower declared knowledge when other variables were controlled for. So within the exposed group, tailored programs are needed for managers, owners, females, smokers and those in licensed premises. *Any* of these characteristics appear to make those in the exposed group less knowledgeable about the risks from SHS. So owners of licensed premises appear to need particular help with information, even if, for instance, they are non-smoking.

Part time workers (who are much more likely to be female and under 24 years of age) appear to be especially at risk. They have a comparatively low knowledge about the health effects of SHS, and are less likely to be covered by workplace education programs.

Mass media education programs on the dangers of SHS would also have direct and indirect benefits for the hospitality workers at risk. Greater knowledge would help the public demand safer hospitality venues, which in turn would make voluntary or legal smokefree policies more likely.

There are a number of predicted benefits, both immediate and longer term, from educational and media programs on the effects of SHS. They include:

- *Increased cessation*. A comprehension of the dangers of SHS is one of the four major predictors for stopping smoking (WHO 2000 p.2).
- *Increased pressure for policies for safer workplaces*. From hospitality workers and the public.

3.2.4 Questions to answer in further research

Many of the questions that arise from this survey could be addressed by qualitative, in-depth research that probes into the complexities of information exposure and absorption for individuals and groups. The questions include:

- Why is there a strong link for owners and managers between irritation from SHS at work and knowledge of the effects of SHS, and why is that link for bar and waiting staff not strong?
- Why do owners of smoky places appear so ignorant compared to their bar and waiting staff?
- Why are some groups polarised in their knowledge about the effects of SHS for cancer, and others in their knowledge for the effects of SHS for asthma or strokes, even when other variables are allowed for?

3.3 The attitudes to smoking restrictions in bars

The attitudes to restrictions on smoking in bars can be interpreted in various ways. One is that 70% of the owners and managers of licensed premises wanted some restrictions on smoking. Only 12% of non-smoking owners of bars and eating-places wanted no restrictions on smoking in bars.

The different attitudes to restrictions on smoking in bars, from staff and owners in licensed and other venues may be due to the different level of experience with smoking restrictions. Since 1990, eating places have had to have a minimum of 50% of their seating for non-smokers, with signage. A far larger proportion of non-licensed eating places has gone smokefree compared to licensed places. Having seen that smoking restrictions are workable, or that smokefree policies are practical, the staff and owners of non-licensed eating places have fewer of the fears that those in licensed places, particularly those in pubs.

It is positive that those smoking up to 10 cigarettes per day are much less likely to be against smoking restrictions than heavier smokers. This reinforces the information from surveys of the public in New Zealand and elsewhere which show a significant proportion of smokers who prefer to be in smokefree places, or who support smoking restrictions (National Research Bureau 1999 p.20); (Taskforce on passive smoking 1997 pp.59. 60)

3.4 The socioeconomic implications of the research

The large differences between their likelihood of having moved in the last year appear to show considerable socioeconomic differences between owners and non-owners in the hospitality industry. Ownership of a business and longer length of residence in one place can be used as indicators of higher socioeconomic position (Milani, Cortinovis et al. 1983; Muntaner and Parsons 1996).

Thus the bar and waiting staff appear to be likely to have multiple health risks. Besides the likelihood of exposure to SHS and being in a work environment that makes it harder to give up smoking, they are more likely to suffer the worse health of lower socioeconomic groups (Ministry of Health 1999; Howden-Chapman 2000).

3.5 The legislation policy implications of the research

The legislative options for the protection of workers and the public from the effects of SHS can be generally divided into:

- A ‘hands off’ market approach which depends on the education of owners, staff and the public to inform the market, and for market forces to decide if premises are smokefree.
- Legislative intervention to protect groups at risk whom the market does not protect.

The implications of the research include:

- The majority of bar and waiting staff and owners are at present at risk of illness and early death from exposure to SHS.
- The hospitality industry is insufficiently informed for a market approach to the protection of workers and patrons to be effective.
- Because of the considerable pessimism about future patronage in bars after smoking restrictions, a market approach to the protection of workers and patrons from SHS would depend on the altruism of owners.
- A legislative policy of smokefree workplaces and public places would ensure that market failure does not result in workers and the public continuing to be at risk.
- The imposition of smokefree policies will have benefits in enabling smokers to quit. In this survey women in smokefree places appeared to be more likely to have given up smoking compared to those in smoky places. This evidence is supported by that in other countries showing that smokefree workplace policies contribute to declines in rates of smoking and declines in the prevalence of smoking by workers and others. (Chapman, Borland et al. 1999).

4 Recommendations

1. That government and non-government agencies urgently address the need for health promotion programs for New Zealand on the risks of and policies for second hand smoke.
2. That such programs are designed both for the general public and for specific groups within the hospitality industry.
3. That these programs particularly highlight:
   - The harmful effects of secondhand smoke.
   - The particular vulnerability of workers in the hospitality industry.
   - The positive experience of smokefree restaurants and bars in New Zealand.
   - The practicality and positive experience of smokefree bar laws elsewhere.
   - The disparity between the industry perception of the public's wishes, and the actuality.

Appendix One: Further information on the demographics of the interviewees
(Single variable analysis by EpiInfo)

Age
Owners were generally much older than managers and bar and waiting staff. Eighty six percent of bar and waiting staff (90% for licensed premises), 76% of managers and only 28% of owners were aged 34 years and under. Sixty two percent of bar and waiting staff (68% for licensed premises), 30% of managers (23% for licensed premises) and only 8% of owners (11% for licensed premises) were aged 24 years and under. Part time workers were much more likely to be under 24 years of age (53% compared to 35% of the full time workers (p=.004).

Table twenty: Age and position

	Owners			Managers			Bar/waiting staff			Total
	All	Licsd	Non	All	Licsd	Non	All	Licsd	Non	
Under 25	8%	11%	5%	30%	23%	47%	62%	68%	54%	39%
Under 35	28%	32%	23%	76%	76%	75%	86%	90%	80%	69%
35 & over	72%	68%	77%	24%	24%	26%	14%	10%	20%	31%

Smoking status
Owners were much less likely to be smokers compared to the others (27% compared to 48% for managers and 42% for staff, p=.007). The licensed or non-licensed status of the premises did not make a significant difference to the likelihood of the owners being smokers. In licensed premises the difference between owners who smoked and other groups was even greater than in the whole sample.

Table twenty one: Smoking status and position
(Figures for licensed and non-licensed premises given)

	Owners			Managers			Bar/waiting staff			Total
	All	Licsd	Non	All	Licsd	Non	All	Licsd	Non	
Smokers	25%	25%	25%	47%	51%	40%	43%	48%	36%	40%
Non-smokers	75%	75%	75%	52%	49%	60%	57%	52%	64%	60%

Smoking and gender
A similar proportion of males smoked (41%) compared to females (39%). The occupational differences continued within the genders. Only 24% of female owners smoked, compared with 47% of female managers and 40% of female bar and waiting staff (p=.039). Similarly 26% of male owners smoked, compared with 46% of male managers and 47% of male bar and waiting staff (p=.014).

Table twenty two: Smokers by gender and position as a % of the whole sample
(Eg 31% of female managers in non-licensed premises were smokers)

	Owners			Managers			Bar/waiting staff			Total
	All	Licsd	Non	All	Licsd	Non	All	Licsd	Non	
Female	24%	25%	23%	47%	52%	31%	40%	49%	28%	39%
Male	26%	25%	27%	46%	49%	44%	47%	45%	50%	41%

*Table twenty three: The characteristics of the sample used – **numbers** within each group*

	Total	Gender		Age Group					Licensed	Non-Licensed	Ethnicity							Smoking Status		
		Male	Fmle	15-24	25-34	35-44	45-54	55+			M	NZE	Ind	Chin	Euro	PI	Other	Current	Ex	Never
Bar/waiting staff	196	70	126	120	48	19	8	1	114	82	29	113	6	14	13	7	14	82	39	75
Managers	135	78	57	41	59	16	13	6	94	41	15	83	8	4	4	6	15	65	16	54
Owners	104	56	48	9	20	34	6	11	50	54	5	51	6	10	9	4	19	28	21	55
In this wk to 5yrs	259	112	147	143	56	32	22	6	148	111	29	150	11	17	13	12	27	99	44	116
Over 5yrs	176	92	84	27	71	37	29	12	110	66	20	97	9	11	13	5	21	76	32	68
Part time	100	36	64	53	22	14	5	6	58	42	12	58	3	9	3	4	11	38	19	43
Full time	335	168	167	117	105	55	46	12	200	135	37	189	17	19	23	13	37	137	57	141
Exposed to smoke	259	126	133	97	79	44	32	7	198	61	34	152	6	19	14	8	26	120	38	101
Not exposed	176	78	98	73	48	25	19	11	60	116	15	95	14	9	12	9	21	55	38	83
Smoker	175	88	87	70	54	28	18	5	117	58	28	103	2	4	8	8	22			
Ex-smoker	76	36	40	31	22	9	11	3	39	37	7	50	5	2	7	1	4			
Never smoked	184	80	104	69	51	32	22	10	102	82	14	94	13	22	11	8	22			
Licensed	258	124	134	106	83	37	24	8			37	153	10	13	18	12	15	117	39	102
Unlicensed	177	80	97	64	44	32	27	10			12	94	10	15	8	5	33	58	37	82
Male	204			73	64	33	24	10	124	80	18	108	14	10	13	11	30	88	36	80
Female	231			97	63	36	27	8	134	97	31	139	6	18	13	6	18	87	40	104
15-24	170	73	97						106	64	20	113	3	8	8	11	7	70	31	69
25-34	127	64	63						83	44	18	64	9	8	5	4	19	54	22	51
35-44	69	33	36						37	32	7	27	4	6	8	0	17	28	9	32
45-54	51	24	27						24	27	4	31	2	6	3	1	4	18	11	22
55 and over	18	10	8						8	10	0	12	2	0	2	1	1	5	3	10
Total	435	204	231	170	127	69	51	18	258	277	49	247	20	28	26	17	48	175	76	184
1-10 cigs/day	78	35	43	41	21	7	6	2	43	35	12	42	2	3	2	5	12	78		
Over 10 cigs/dy	98	53	45	29	33	21	12	3	74	24	16	62	0	1	6	3	10	98		

*Table twenty four: The characteristics of the sample used – **percentages** within each category*
(Percentage of each category within the row, to the nearest whole number)

	Total	Gender		Age Group					Licensed	Non-Licensed	Ethnicity							Smoking Status		
		Male	Fmle	15-24	25-34	35-44	45-54	55+			M	NZE	Ind	Chin	Euro	PI	Other	Current	Ex	Never
Bar/waiting staff	45%	36%	64%	61	24	10	4	1	58%	42%	15	58	3	7	7	4	7	42%	20%	38%
Managers	31%	57%	43%	30	44	12	10	4	70%	30%	11	61	6	3	3	4	11	48%	12%	40%
Owners	24%	55%	45%	9	19	33	6	11	48%	52%	5	49	9	11	13	5	18	27%	20%	53%
In this wk to 5yrs	59%	43%	57%	55	22	12	8	2	57%	43%	11	58	4	7	5	5	10	38%	17%	45%
Over 5yrs	41%	52%	48%	15	40	21	16	7	63%	37%	11	55	5	6	7	3	12	43%	18%	39%
Part time	23%	36%	64%	53	22	14	5	6	58%	42%	12	58	3	9	3	4	11	38%	19%	43%
Full time	77%	50%	50%	35	31	16	14	4	60%	40%	11	56	5	6	7	3	11	41%	17%	42%
Exposed to smoke	60%	49%	51%	37	30	17	12	3	76%	34%	13	58	2	7	5	3	10	46%	15%	39%
Not exposed	40%	44%	56%	41	27	14	11	6	34%	66%	9	54	8	5	7	5	12	31%	22%	47%
Smoker	38%	50%	50%	40	31	16	10	3	67%	33%	16	59	1	2	5	5	13			
Ex-smoker	17%	47%	53%	41	29	12	14	4	51%	45%	9	66	7	3	9	1	5			
Never smoked	45%	44%	56%	38	28	17	12	5	55%	45%	8	51	7	12	6	4	12			
Licensed	59%	48%	53%	41	32	14	9	3			14	59	4	5	7	5	6	45%	15%	40%
Unlicensed	41%	45%	55%	36	25	18	15	6			7	53	6	8	5	3	19	33%	21%	46%
Male	47%			38	31	16	12	5	61%	39%	9	53	7	5	6	5	15	43%	18%	39%
Female	53%			42	27	16	12	3	58%	42%	13	60	3	8	6	3	8	38%	17%	45%
15-24	39%	43%	57%						62%	38%	12	66	2	5	5	6	4	41%	18%	41%
25-34	29%	50%	50%						65%	35%	14	50	7	6	4	3	15	43%	17%	40%
35-44	16%	48%	52%						54%	46%	10	39	6	9	12	0	25	40%	13%	46%
45-54	12%	47%	53%						47%	53%	8	61	4	12	6	2	8	35%	22%	43%
55 and over	4%	55%	45%						45%	55%	0	66	11	0	11	6	6	28%	16%	56%
Total	100%	47%	53%	39	29	16	12	4	59%	41%	11	57	5	6	6	4	11	40%	18%	42%
1-10 cigs/day	44%	45%	55%	54	27	9	8	3	55%	45%	15	54	3	4	3	6	15	44%		
Over 10 cigs/day	56%	54%	46%	30	34	21	12	3	76%	24%	16	64	0	1	6	3	10	56%		

Table twenty five: Occupational position and other occupational factors

	Total N	In this wk to 5yrs		Over 5yrs		Part time		Full time		Exposed to smoke		Not exposed	
		N	%	N	%	N	%	N	%	N	%	N	%
Bar/waiting staff	196	147	75	49	25	77	39	119	61	109	56	87	44
Managers	135	63	47	55	53	3	15	115	85	88	65	47	35
Owners	104	49	47	55	53	3	3	101	97	62	60	42	40
Part time	100	76	76	24	24					55	55	45	45
Full time	335	183	55	152	45					204	61	131	39
Exposed to smoke	259	148	57	111	43								
Not exposed	176	111	63	65	37								
Total	435	259	60	176	40	100	23	335	77	259	60	176	40

Smoking rates

There was a general pattern of heavier smoking (over 10 cigarettes per day) in owners, males and those in licensed premises. Eighty seven percent of the male owners of licensed premises who smoked were in this group, compared to 35% of the female staff in non-licensed premises and 56% for all the smokers.

Smoking rates and position: Waiters and bar staff reported being much lighter smokers (46% smoked more than 10 day) than both managers (65%) and owners (68%) (p=.022). In licensed premises 79% of owners and 73% of managers reported smoking more than 10 a day, compared to 50% of bar and waiting staff (p=.019).

Smoking rates in licensed/non-licensed venues: Those working in licensed premises were much more likely to be heavier smokers compared to those in un-licensed places. In licensed places 87% smoked more than five a day and 63% smoked more than 10 a day compared to the 77% who smoked more than five a day and 43% who smoked more than 10 a day in non-licensed places (p=.007). Managers in licensed premises were more likely to be heavier smokers (90% smoked more than five a day and 73% smoked more than 10 a day) compared to those in un-licensed places (81% smoked more than five a day but only 38% smoked more than 10 a day) – (p=.031).

Smoking rates and gender: Except for managers, males were more likely to be heavier smokers. Female managers were much more likely to smoke more than 10 a day (69%) compared to female owners (50%) and female bar and waiting staff (40%) – (p=.049).

Table twenty six: Heavier smokers, gender and position
(As a percentage of the whole sample of smokers for each group, eg 40% of managers in non-licensed premises smoked over 10 cigarettes per day).

Over 10 cigs/ day	Owners			Managers			Bar/waiting staff			Total		
	All	Licsd	Non	All	Licsd	Non	All	Licsd	Non	Licsd	Non	All
Fem'l	50 %	67%	33%	69%	75%	40%	41 %	43%	35 %	57%	36 %	50 %
Male	81 %	87%	75%	61%	71%	36%	53 %	62%	40 %	70%	47 %	62 %
All	68 %	79%	57%	65%	73%	38%	46 %	50%	38 %	63%	43 %	56 %

Age and smoking rates: Using age groups of 15-24, 25-34, 35-44, 45-54, 55 and over, there was a definite inverse curve for the amount smoked, with the amount generally increasing with age until the 35-44 age group and then declining. There was a curve for the both contrasts between up to five cigarettes per day and over (p=.028), and for up to 10 per day and over (p=.005). Three percent of those smokers aged 35-44 smoked five cigarettes or under, compared to 24% of those aged 18-24 (p=.016). Twenty one percent of those age 35-44 smoked 10 or under per day, compared to 59% of those aged 18-24 (p<.001).

Table twenty seven: Age and smoking rates
(Percentages of each age group)

	15-24	25-34	35-44	45-54	55 & over	All
Up to 5 cigs/day	24%	16%	3%	0%	20%	16%
Up to 10 cigs/day	59%	39%	21%	33%	40%	44%
Over 10 cigs/day	41%	61%	79%	67%	60%	56%

Appendix Two: Further information on the knowledge of groups

Knowledge about the risks from SHS – controlling for variables

The answers for five questions on the effects of SHS on health were tested against all the variables together of:

- age,
- gender,
- smoking status,
- the smoky or smokefree workspace status of the interviewee,
- licensed status of workplace,
- occupational position, (owner, manager, or bar/waiting staff)
- part time/fulltime status,
- attitudes to smoking restrictions in bars, and
- optimism or pessimism about patronage in bars after restrictions.

Table twenty eight: Adjusted odds ratios and confidence intervals for the probability of lower declared knowledge

	Single variable comparison				Multivariable comparison		
	Odds ratio	95% CI	p-value		Odds ratio	95% CI	p-value
Female – SHS effect for asthma	1.94	1.23-3.37	p=.020		3.99	2.10-7.62	p<.001
Managers compared to staff – SHS effect for asthma	2.81	1.46-5.41	p=.003		5.82	5.38-6.31	p<.001
Smoker – SHS effect for life length	2.47	1.61-3.78	p<.001		2.83	1.63-4.24	p<.001
Smoker – SHS effect for cancer	3.07	2.00-4.71	p<.001		4.45	2.31-8.57	p<.001
Part time work – SHS effect for cancer	1.77	1.10-2.83	p=.020		2.25	1.17-4.33	p=.019
Part time work – SHS effect for strokes	1.80	1.04-3.12	p=.038		2.55	1.33-4.89	p=.006
Working in smoky place – SHS effect for strokes	1.93	1.21-3.07	p=.007		1.80	1.02-3.19	p=.047
Against smoking restrictions – SHS effect for heart disease	1.61	1.02-2.53	p=.044		1.76	1.05-2.93	p=.035
Over 35 years – SHS effect for asthma	3.01	1.64-5.52	p<.001		5.17	2.25-11.89	p<.001
Under 35 years – SHS effect for strokes	2.08	1.29-3.35	p=.004		2.62	1.41-4.86	p=.003

Table twenty nine: For those exposed to SHS at work, adjusted odds ratios and confidence intervals for the probability of lower declared knowledge

	Single variable comparison				Multivariable comparison		
	Odds ratio	95% CI	p-value		Odds ratio	95% CI	p-value
Female – SHS effect for cancer	2.91	1.47-5.74	p=.004		6.36	1-15.93	p<.001
Manager compared to owners - SHS effect for cancer	4.59	1.78-11.84	p=.003		10.49 #	3.18-34.60#	p=.001 #
Owners compared to staff - SHS effect for life length	2.79	1.38-5.64	p=.007		2.86	1.09-7.49	p=.041
Owners compared to managers - SHS effect for life length	2.28	1.10-4.75	p=.034		2.51*	1.10-5.73*	p=.037 *
Pessimist about post-restriction patronage – SHS effect for asthma	2.55	1.15-5.68	p=.027		2.78	1.16-6.68	P=.030
Over 35 years - SHS effect for asthma	3.11	1.35-7.15	p=.012		3.52	1.15-10.76	P=.035
Under 35 years - SHS effect for strokes	3.80	1.78-8.09	p=.002		6.56	2.47-17.45	P=.001

* Allowing for only for age, gender and smoking status

Appendix Three: Further information on the attitudes of groups

Table thirty: Adjusted odds ratios and confidence intervals for the probability of being less likely to want smoking restrictions in bars

Groups less likely to want any restrictions on smoking in bars	Single variable comparison				Multivariable comparison		
	Odds ratio	95% CI	p-value		Odds ratio	95% CI	p-value
Males compared to females	2.31	1.34-3.98	p=.004		2.35	1.27-4.35	p=.008
Managers compared to owners	2.71	1.37-5.34	p=.005		3.38	1.23-9.30	p=.021
Managers compared to staff	2.68	1.40-5.16	p=.004		2.84	.95-8.43	p=.065#
Smokers compared to non-smokers	12.14	6.67-22.08	p<.001		58.15 *	28.44-118.89*	p<.001*
Part time workers cf full time	3.26	1.46-7.26	p=.005		3.38	1.50-7.61	p=.005
Over 5 yrs in industry cf under 5	2.57	1.44-4.59	p=.002		4.27	2.05-8.87	
Pessimist about post-restriction patronage cf to not pessimist	5.33	2.39-1.89	p<.001		6.01 @	3.25-11.14@	p<.001@
Up to 35 years cf over 35 years	1.97	1.05-3.73	p=.039		3.10	1.31-7.34	p=.013

Not statistically significant
* With only age and gender

Table thirty one: For those exposed to SHS at work, adjusted odds ratios and confidence intervals for the probability of being less likely to want smoking restrictions in bars

Groups less likely to want restrictions on smking in bars	Single variable comparison				Multivariable comparison		
	Odds ratio	95% CI	p-value		Odds ratio	95% CI	p-value
Smokers cf to non-smokers	18.12	7.72-42.57	p<.001		18.06*	7.68-42.49*	p<.001*
Pessimist re post-restriction patronage compared to not	5.33	2.39-11.90	p<.001		5.89@	2.57-13.51@	p<.001@
In industry > 5 yrs cf to 5 yrs	2.73	1.30-5.73	p=.012		2.63	1.10-6.28	p=.039
In licensed plces cf un-licsed	3.88	1.32-11-38	p=.019		3.76	1.10-12.89	p=.044

*Only smoking status and age used
@ With only age and gender added

Further contrasts in the relationship between knowledge and attitudes

The different occupations showed different knowledge levels, even amongst those with the same attitudes.

Table thirty two: Knowledge about SHS effects and attitudes to restrictions
(Percentage not knowing about the effect of SHS on the risk of breathing problems)

	Staff	Managers	Owners	All
Want restrictions	5%	4%	10%	6%
No restrictions	15%	13%	27%	17%
All	7%	7%	13%	8%

Those wanting stronger restrictions on smoking in bars
When looking at those wanting either smoking only in separate rooms, or no smoking at all, for all positions, there was a correlation between not knowing or being unsure that SHS increases the risk of shorter life, and not wanting the stronger restrictions.

Table thirty three: Knowledge about SHS effects and attitudes to weaker/stronger restrictions
(Analysis by EpiInfo, percentage not knowing about the effect of SHS on the risk of shorter life)

	Staff	Managers	Owners
Wanted stronger restrictions on smoking	31%	32%	41%
Not wanted stronger restrictions	47%	50%	65%
Statistical significance of difference	p=.025	p=.037	p=.014

Appendix Four: Survey questionnaire

This is a short survey by the Wellington School of Medicine of people working in bars, cafes and restaurants. The information you give will be confidential.

We are interested about your opinion of smoking in workplaces. If you would like to look at the information sheet first, or if another time would be better, I can come back later or at another time. Or is now OK?
Here is an information sheet.

Id Number_____
Number of workers here at present_____
Number of interviews per locations_____

Licensed

01☐ Yes

02☐ No

Gender

01☐ Male

02☐ Female

1) What is your age?

01☐ under 15

02☐ 15-24

03☐ 25-34

04☐ 35-44

05☐ 45-54

06☐ over 55

2) Which ethnic group or groups do you identify with?

- ☐ Maori
- ☐ NZ European-Pakeha
- ☐ Indian
- ☐ Chinese
- ☐ Other European
- ☐ Pacific peoples
- ☐ Others (Specify) _____
- ☐ Refused/Don't know

When only one ethnicity has been stated ask: **Are there any other ethnic groups which you identify with?** (Specify) _____

3) Have you moved your residential address in the last year?

- 01 ☐ Yes
- 02 ☐ No

4) Are you enrolled on the Electoral Roll?

- 01 ☐ Yes
- 02 ☐ No
- 03 ☐ Under 18
- 04 ☐ No answer

5) Do you think that bars (taverns or licensed premises) should

01☐ a) **Have no restrictions on smoking at all**

02☐ b) **Have 50% floor area non-smoking**

03☐ c) **Have smoking only in separate rooms so smoke can't drift into non-smoking areas**

04☐ d) **Have no smoking allowed at all**

05☐ e) **No opinion**

6) Do you think that a requirement for a minimum of one smokefree room in bars or taverns (even when there is only one room for public use) would increase or decrease the patronage by customers?

01☐ Increase

02☐ Decrease

03☐ No difference

04☐ Don't know

7) Do you think that a requirement for a minimum of one smokefree room in cafes restaurants and coffee shops (even when there is only one room for public use) would increase or decrease the patronage by customers?

01☐ Increase

02☐ Decrease

03☐ No difference

04☐ Don't know

8) Do people smoke within the rooms in which you work?

01☐ Yes Go to Q9

02☐ No Go to Q10

9) Does the smoke in the air at work irritate your throat or lungs?

01☐ Not at all

02☐ Occasionally

03☐ Often

04☐ All the time

05☐ Don't know

Go to Q10

10) Are all the public areas totally smokefree?

01☐ Yes

02☐ No

11) Do you think that other people's tobacco smoke in the air can shorten peoples' lives?

01☐ No

02☐ Yes

03☐ Possibly

04☐ Probably

05☐ Don't know

11) Does breathing other people's smoke increase the risk of the following illnesses?

- **Asthma**
  - 01☐ Yes
  - 02☐ No
  - 03☐ Don't know
- **Cancer**
  - 01☐ Yes
  - 02☐ No
  - 03☐ Don't know

Strokes 01☐ Yes

02☐ No

03☐ Don't know

- **Heart disease** 01☐ Yes

02☐ No

03☐ Don't know

- **Breathing problems** 01☐ Yes

02☐ No

03☐ Don't know

- **Cot deaths of babies** 01☐ Yes

02☐ No

03☐ Don't know

12) How many years have you worked at least part time in a bar, café or restaurant?

01☐ Less than 1 year

02☐ Between 1 and 5 years

03☐ Between 6 and 10 years

04☐ Over 10 years

13) **How would you describe your occupational position in this premises?**

☐ **Owner**

☐ **Manager**

☐ **Bar staff**

☐ **Waiting staff**

14) Are you working part time or full time in this position?

01☐ Part time

02☐ Full time

15) **Are you a current smoker** 01☐ → go to Q16

ex smoker 02☐ → go to Q19

non smoker 03☐ → go to Q20

16) *If a smoker*, at what age did you start smoking regularly?
(Definition > 1 cigarette per day)

01☐ under 15

02☐ 15-18

03☐ 18-21

04☐ 0ver 21

17) *If a smoker*, was the age when you started smoking regularly before or after you started working in bars or eating-places?

01☐ Before

02☐ After

18) *If a smoker*, how many cigarettes do you smoke per day?

01☐ 0

02☐ 1-5

03☐ 6-10

04☐ 11-20

05☐ over 20

If you smoke rollies, how long does a 50 or 100 grams tobacco packet last you normally (Choose 50 or 100 – whatever is more normal for the person).

(50 g packet)
- 01☐ Under 2 days
- 02☐ 2-3 days
- 03☐ 4-5 days
- 04☐ 6-7 days
- 05☐ over 7 days
- 06☐ over 2 weeks

(100 g packet)
- 07☐ Under 2 days
- 08☐ 2-3 days
- 09☐ 4-5 days
- 10☐ 6-7 days
- 11☐ over 7 days
- 12☐ over 2 weeks

19) *If an ex-smoker*, how long since quitting?

- 01☐ Less than 6 weeks
- 02☐ 6 weeks – 6 months
- 03☐ over 6 months
- 04☐ over 1 year

20) Do you want to receive the results of this survey?

01☐ Yes

02☐ No

21) Do you want to receive information on the effects of passive smoking?

01☐ Yes

02☐ No

Name

_____

Address

_____

_____

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