

Masters in Public Health

Lakehead University

THESIS

Smoking Behaviour – a survey of Canadians in Qatar

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Canada

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ABSTRACT

Introduction

Canada has relatively strict tobacco control policies as public smoking is banned in most jurisdictions and cigarettes are heavily taxed. In Canada, cigarettes cost approximately \$10 for a package of 20. Corresponding with an increase in tobacco control over the past several decades, smoking prevalence in Canada has decreased significantly, currently at 19%. Qatar has less strict tobacco control with a high prevalence of public smoking and cigarettes are not taxed. In Qatar, cigarettes cost approximately \$2 for a package of 20. Data on smoking prevalence in Qatar are difficult to collect due to cultural and religious restrictions. However, some studies have estimated the smoking prevalence in Qatar to be greater than 35%.

Rationale

The rationale of this study was to evaluate the effect of a decrease in tobacco control on the smoking behaviour of Canadians.

Methods

Cross-sectional design utilizing a web-based questionnaire to a convenience sample (n=181) of Canadians employed at a college in Qatar.

Results

Prevalence of smoking among Canadians was found to be significantly higher while living in Qatar (Qatar - 18%, Canada - 14%; $p < .001$). Over 60% of smokers consumed more cigarettes in Qatar. Current smokers cited low prices and increased public smoking as reasons for their recidivism and increased consumption.

Conclusions and Implications

The availability of cheaper cigarettes and increased access to public smoking may lead to an increase in smoking prevalence and consumption of cigarettes. The results are important because they indicate if tobacco control in Canada is decreased; the prevalence of smoking and consumption of tobacco may increase.

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Chapter 1 – Introduction

1.1 Introduction

Tobacco kills one person in the world every six seconds (WHO, 2008).

Deaths caused by tobacco total 5.4 million per year worldwide (WHO, 2008).

Smoking cigarettes is considered the leading cause of preventable deaths in the world. Tobacco has been identified as the primary factor in six of the eight leading causes of death; including heart disease, stroke, cancer and chronic lung diseases (WHO, 2008).

In the past number of decades, the developed world has seen a decrease in the prevalence of smoking among its citizens. During the same time period, the developing world has been experiencing an increase in the number of smokers. In fact, the World Health Organization (WHO) predicts by 2030 there will be 8 million deaths every year from tobacco use with 80% of those deaths occurring in the developing world (WHO, 2008).

An increase in the price of cigarettes has often been credited with contributing to the decrease in smoking prevalence in the developed world. Taxation and the corresponding increase in price is a component of tobacco control (WHO, 2008).

The Framework Convention on Tobacco Control (FCTC) is the one of the largest treaties in the history of the United Nations. It calls for all signatory nations to adapt strict tobacco control policies in the interest of decreasing the prevalence of smoking and tobacco consumption. The FCTC dictates implementation of specific strategies to improve tobacco control; including legislation to increase taxation on tobacco, bans on advertisement and sponsorship, legislation and enforcement to limit or ban public smoking, and support for the smoker in quitting smoking (WHO, 2008).

Over 150 countries have already signed the treaty, including both Canada and Qatar.

Canada signed the FCTC in 2003 (WHO, 2008). Canada had already adapted many of the tobacco control strategies included in the FCTC as part of Health Canada's Federal Tobacco Control Strategy (Health Canada, 2005). Canada is considered a world leader in legislation to support tobacco control; including bans on advertising, taxation and implementation and enforcement of public smoking bans. Strict tobacco control in Canada has been credited with a significant decline in smoking prevalence among the Canadian population.

Qatar also signed the FCTC in 2003 (WHO, 2008). However, there seems to be minimal tobacco control implementation in Qatar (WHO, 2000). Consequently, the country has a high prevalence of smoking. The WHO region where Qatar is located, the Eastern Mediterranean region, has a much higher average prevalence of smoking compared to Canada (WHO, 2001). The estimated smoking prevalence among males in Qatar is 37%

compared to 19% for the overall population in Canada (WHO, 2001; Health Canada, 2007).

The inverse relationship between tobacco control and smoking prevalence is well established in the developed world. This paper will examine if the inverse relationship exists in the opposite direction, i.e. will a decrease in tobacco control lead to an increase in smoking prevalence.

1.2 Research Problem

The purpose of this study was to describe the smoking profile of Canadians living in Qatar; a country where smoking in public gathering places is widely accepted; where the harmful effects of cigarette smoking is not advertized; and where the costs of cigarettes is so low that it increases the access to cigarettes.

It is expected that these specific social characteristics will be mediators of an increased smoking prevalence and an increased recidivism to smoke, among Canadians living in Qatar.

1.3 Measure of interest

The measure of interest, or dependent variable, is smoking behaviour. The dependent variable will be measured through a customized survey to determine smoking prevalence, number of cigarettes smoked/day, and recidivism.

1.4 Independent variables

The independent variables include the cost of cigarettes, marital status and education. The independent variables were selected because they are known to have an impact on smoking prevalence and consumption. These variables are also expected to be influential among the population and environment studied.

1.5 Rationale

The knowledge gained from this study is important for a number of reasons. An understanding of the affect of tobacco control and cigarette prices on smoking prevalence and consumption is important to validate current strict tobacco control and high prices in Canada. Due to continued pressure from tobacco industry lobbyists, the government is pressured to decrease tobacco control and/or taxation. The results from this study will help to inform public health officials and legislators the potential impact this action could have on smoking prevalence and consumption. The results from this study will inform public health officials in the State of Qatar in reference to the level of public smoking and

the effectiveness of current legislation and enforcement. The administrators of the College of the North Atlantic-Qatar may use the results to support implementation of smoke-free regulations on the Qatar campus, just as it would be at a Canadian campus. The results of the study may also inform administrators at CNA-Q of the need for a smoking cessation program for Canadians in Qatar to counteract the increase in prevalence and consumption which may be seen.

Chapter 2 – Literature Review

2.1 Literature Search Strategy and Search terms

The databases Pubmed, Proquest, CINAHL and Cochrane Databases of Systematic Reviews were used for the review of literature for this research project. Peer-reviewed journal articles in the English language were searched with no date restrictions. Most journal articles used were recent, within the last 10 years, with a few exceptions. Epidemiological statistics and information were gathered from the websites of the following organizations: World Health Organization, Health Canada, Statistics Canada as well as from some provincial and national public health websites.

The search terms tobacco control, smoking prevalence, tobacco consumption, cigarette taxation, public smoking legislation were used for this research. Additionally, a ‘snowball approach’ was used to obtain journal articles from lists of references.

2.2 Definition of tobacco control

Tobacco control is accomplished by a comprehensive program of legislation, taxation and regulations. Bans on public smoking and tobacco advertising along with health warnings on cigarette packages are vital to any tobacco control program (Health Canada, 2005). Taxation, resulting in an increase in the cost of tobacco products, is considered the most effective component of any tobacco control program (Stephens et al., 2001).

The Framework Convention on Tobacco Control (FCTC) was developed in response to the tobacco epidemic reaching all corners of the globe. The World Health Organization (WHO) sponsored treaty signed by the United Nations set out to protect the public health of all citizens around the world. The primary goal of the FCTC is to reduce demand for tobacco products. This goal will be achieved by participating countries implementing core policies of tobacco control based on price or non-price measures. Price measures involve increasing taxation of tobacco products subsequently increasing the consumer price. Non-price measures include protection from exposure to tobacco smoke with bans on public smoking, regulation of the contents of tobacco products and tobacco packaging, education and public awareness, bans on tobacco advertising and sponsorship, and assistance with smoking cessation (WHO, 2003).

The WHO continues to encourage the implementation of tobacco control legislation. In 2008, the WHO published the WHO Report on the Global Tobacco Epidemic. The 2008 report highlights the same tobacco control policies that were introduced in the FCTC; including taxation on tobacco products, bans on advertising by tobacco companies, protection of people from tobacco smoke by providing smoke free public places, public education on the hazards of tobacco and helping people quit smoking (WHO, 2008).

2.3 Tobacco control in Canada

Canada is considered a world leader in tobacco control. The government of Canada signed the Tobacco Act in 1997 and introduced the Federal Tobacco Control Strategy in

2001. The legislation and strategy aim to reduce the number of people smoking in Canada as well as the number of people exposed to secondhand tobacco smoke. The four main components of Health Canada's tobacco control strategy include protection, prevention, cessation and product regulation (Health Canada, 2002).

In Canada, responsibility for tobacco control legislation and regulation lies with three levels of government. The federal, provincial and municipal governments collaborate their efforts to ensure a comprehensive tobacco control program. Collaboration on tobacco control by all three levels of government is enabled by the Tobacco Control Liaison Committee (Health Canada, 2002).

Currently, seven of the ten Canadian provinces have complete bans on smoking in all public places. The other three provinces and the three territories have partial bans limiting smoking in most public places. However, in some of the provinces where there is not a total ban on public smoking, many municipalities have very strict tobacco control laws banning smoking in all public areas (Health Canada, 2005).

Taxation on cigarettes in Canada is under the jurisdiction of both the federal and provincial or territorial governments. Currently in Canada, the average price of 200 cigarettes is \$90 or \$9 for a package of 20 cigarettes (NSRA, 2009). The federal and provincial or territorial taxes account for approximately 50% of the total price of cigarettes in Canada (OTRU, 2009).

2.4 Tobacco control in Qatar

The government of State of Qatar signed a new tobacco control law in 2002. The law banned smoking in public places, advertisement of tobacco products in all forms of media, and selling tobacco products to children under the age of 18 years (Al. Binali, 2003).

According to the World Health Organization (WHO), Qatar does have a national tobacco control program. However, the country does not have a primary or secondary prevention strategy, or any monitoring or enforcement of the implementation of tobacco legislation. The country also does not conduct regular surveys to investigate the smoking prevalence and tobacco consumption rates among the population. Cigarette packages in Qatar contain no pictorial warnings and minimal written warnings on the risks of tobacco (WHO, 2000).

The researcher conducted a pilot survey of twenty public venues; including cafes, restaurants and shopping malls throughout the capital city of Doha. Observation at all twenty venues (100%) revealed smoking in public areas, although there are regulations banning such behaviour. Only four (20%) of the venues had signage indicating a ban on public smoking, but on most occasions people were smoking immediately adjacent to the sign indicating a smoking ban (Pendergast, 2006).

Data on the tax rate and price of cigarettes in Qatar were not available. Thus, this information was collected as part of the research study.

2.5 Smoking prevalence and consumption in Canada

Strict tobacco control in Canada, including a high level of taxation, has contributed to a significant reduction in the prevalence of smoking over the last number of decades. The percentage of smokers in Canada has decreased from 50% in 1965 to 18% in 2008 (Health Canada CTUMS, 2008). Even in the short span of five years, between 1999 and 2004; there was a reduction in the prevalence of smoking from 25% to 20% (Health Canada, 2005).

The current prevalence rate of smoking in Canada (18%) represents the lowest prevalence rate ever recorded and the first statistically significant reduction in smoking prevalence since 2004 (20%) (Health Canada CTUMS, 2008). However, as this study was conducted in 2007, the 19% prevalence rate for smoking Canada during that year will be used (Health Canada CTUMS, 2007).

There are gender differences noted in smoking rates. The most recent survey data in Canada reveals more men smoke cigarettes (20%) than women (16%) among the population 15 years or older. Thirteen percent (13%) of Canadians reported smoking cigarettes daily and 4% reported smoking cigarettes occasionally. The number of daily smokers has declined by 28% over the past 10 years but the number of occasional

smokers in Canada has increased by 20% over the same time period (Health Canada CTUMS, 2008). Also, single individuals have been found to have a higher rate of smoking than married or common law individuals (MacDonald, 2006).

Daily and occasional smokers in Canada reported consuming 14.9 and 3.3 cigarettes per day respectively. This current level of consumption represents a 15-30% decrease in consumption from the 1999 rates (Health Canada CTUMS, 2008).

The smoking prevalence rates across the provinces of Canada vary. However, all provinces have a smoking prevalence rate within 3% of the national average of 18%. In 2008, British Columbia had the lowest prevalence of smoking in Canada (15%) and Saskatchewan had the highest prevalence of smoking in Canada (21%) (Health Canada CTUMS, 2008).

2.6 Smoking prevalence and consumption in Qatar

Qatar does not regularly conduct surveys to monitor prevalence and consumption of cigarettes. The World Health Organization (WHO) cites a study conducted in 1999 by Hamad Medical Center reporting a smoking prevalence of 37% among the male population in Qatar (WHO, 2000). However, there is quite a disparity between genders for prevalence of cigarette smoking in Qatar as the same survey reported less than 1% of women smoke. Information on female smoking is difficult to collect in Qatar due to religious and cultural restrictions. Cigarette smoking among the youth in Qatar was

estimated to be 18% for both sexes so there is an indication that traditional cultural and religious values are being lifted allowing more young women to smoke (WHO, 2000).

2.7 Relationship between tobacco control and smoking prevalence/consumption

Smoking prevalence has been negatively associated with cigarette prices in a multitude of studies (Stephens et al, 2001; Stephens et al., 1997; Chalpouka et al., 1995; Ferrence et al., 1995; Reider, 1998). In 2001, Stephens et al found as taxation on cigarettes and the price increased, fewer people smoked. Also, smokers who continued to smoke consumed fewer cigarettes. Findings on a couple of other measures were different when comparison was made between genders. The odds of being a smoker were negatively associated with public smoking bans, but only for women. The odds of being a smoker were also negatively associated with per capita expenditure on health promotion, but only for men (Stephens et al., 2001).

In 1997, Stephens et al found that the odds of being a smoker were higher if you lived in an area with no public smoking bans (OR 1.21). Also, the odds of being a smoker were higher (1.26) if you lived in an area with access to inexpensive cigarettes (Stephens et al., 1997).

Comprehensive tobacco control programs, including bans on public smoking and tobacco advertising along with health promotion campaigns, have also been associated with reducing the prevalence of smoking (Stephens et al, 2001; Stephens et al., 1997;

Chaloupka et al., 1995; Ferrence et al., 1995; Reider, 1998; Pierce, 1998). The studies have all revealed that when public smoking is banned or severely limited, there is a corresponding decrease in the prevalence of smoking.

Smoking bans in public places include work environments. Fichtenberg et al conducted a systematic review to evaluate the effect of a smoke-free work environment on smoking behaviour. Their review of the literature revealed a work environment that is totally smoke-free is associated with a reduction in prevalence of smoking as well as reduced consumption of cigarettes (Fichtenberg et al., 2002).

Health warnings on cigarette packages are an important component of a comprehensive tobacco control program. Canada is a world leader in this area, as it was the first country to pass legislation requiring pictorial images as well as written warnings on the health hazards of smoking and tobacco (Cunningham, 2010). Hammond et al found that the more noticeable and graphic the health warnings on cigarette packages, the more smokers will be aware of the health risks of tobacco. As Canada is one of the only countries with graphic pictorial health warning on cigarette packages, the Canadian smokers surveyed were more knowledgeable about health risks from tobacco as compared to smokers from the three other countries surveyed (Hammond et al., 2006).

There is some evidence to show the relative prevalence of smoking and consumption of tobacco will increase when the cost of cigarettes decreases. In 1994, in an effort to compete with the lower cigarette prices in the USA, the federal government and four of the provinces decreased the taxation rate on cigarettes. The results showed there was a

slower decline in smoking prevalence and a faster rate of initiation of smoking in the four provinces which decreased cigarette tax the most (Hamilton, 1997; Waller et al., 2003).

It is clear from the evidence there is a strong relationship between tobacco control regulations and cigarette smoking. As cigarette prices increase and public smoking bans are legislated, the prevalence of smoking and consumption of tobacco decreases. There is an indication that the relationship exists in the opposite direction. This study will further investigate if the smoking behaviour of Canadians is affected by a change in tobacco control regulations, specifically a decrease in cigarette prices and increased access to smoking in public areas.

Chapter 3 – Methodology

3.1 University Ethics Review

A researcher's agreement form along with samples of the cover letter and survey instrument were submitted to the Research Ethics Board (REB) of Lakehead University for approval. The REB approved the study (REB Project #: 081 06-07) on 01 May 2007.

3.2 Research Design

The research design for this study was cross-sectional. There was no treatment or intervention imposed by the researcher.

The measure of interest, or dependent variable, was smoking behaviour. The dependent variable was measured by determining the degree of public smoking, smoking prevalence, number of cigarettes smoked per day, and dependence level of subjects.

The dependent variable was measured after the subject's exposure to the independent variables; residence in Qatar, lower cigarette prices and higher incidence of public smoking.

The research hypothesis is that there will be a higher prevalence of smoking, higher rate of recidivism, higher rate of initiation of smoking, more cigarettes smoked/day and a higher level of dependence on nicotine among Canadians living in Qatar.

The survey was conducted by an anonymous, confidential and secure on-line questionnaire using the *Zoomerang*© survey instrument. The questionnaire used short-answer questions, including questions with Likert-type scoring. There were also a couple of open-ended questions to collect qualitative data on the subject's opinions or feelings on certain topics related to the dependent variable.

The questionnaire was pilot tested on a group of ten (10) members of the sample population. The individuals who completed the pilot test did not meet the inclusion criteria for this study so therefore would not be eligible to complete the actual survey. Feedback on the sequence and structure of survey questions was also received during a focus group session among those who completed the pilot test. Based on feedback from the pilot test and focus group, minor adjustments were made to some questions.

Standardized questions were used as part of the questionnaire. The standardized survey questions utilized were from national population surveys on smoking (*Canadian Tobacco Use Monitoring Survey* (Health Canada, 2006) and the *Survey on Smoking in Canada* (Statistics Canada, 1995) as well as the *Fagerstrom Test for Nicotine Dependence* (Heatherton et al, 1991).

The questionnaire first investigated subjects' opinions on smoking behaviour and tobacco control in Qatar. Next, smoking status (current vs non-smoker) was investigated, both currently in Qatar and formerly in Canada. The first two parts of the questionnaire took approximately 10 minutes to complete. If the subject was a current smoker, the questionnaire continued for another approximately 10 minutes. The total time for completion of the survey if subject was a current smoker took approximately 20 minutes. Those subjects who were considered non-smokers were exited early from the survey. However, before completing the survey, subjects were asked an open-ended question. The question was "Please describe how public smoking affects your day-to-day life in Qatar".

3.3 Recruitment

The College of the North Atlantic-Qatar (CNA-Q) is a campus of a Canadian college located in the Middle Eastern country of Qatar. There are approximately 400 Canadians working at CNA-Q and living in Qatar. Utilizing non-probability sampling, Canadian staff at CNA-Q was a convenience sample for this survey. Subjects met the inclusion criteria if they were Canadian, at least 18 years of age, lived in Canada immediately prior to living in Qatar and had lived in Qatar for at least 3 months.

Questionnaires were distributed via CNA-Q email. An initial email was sent to all Canadian staff at the college on June 5, 2007 requesting staff to participate in the survey. The email included the cover letter (Appendix I) as well as a web link to the informed consent form (Appendix II) and the questionnaire (Appendix III) on *Zoomerang*©. A

second identical email was distributed to College staff one week later, on June 12, 2007 to request those individuals who had not already completed the survey to please do so. The on-line survey was closed one week later, on June 19, 2007. Subjects had a period of two weeks to complete the survey.

3.4 Sample Size

The study population in this case was Canadian adults with a higher than average level of education. The fact non-probability sampling is being used means the results cannot be generalized to the Canadian population as a whole.

A total of 217 subjects consented to the survey with a total of 181 subjects meeting all the inclusion criteria. The reason for exclusion in all cases was residence, as thirty-three of the subjects (15%) did not live in Canada prior to moving to Qatar and three of the subjects (1%) were not Canadian citizens.

3.5 Data Analysis

The statistical program SPSS (Version 15, 2006) was used for analysis of quantitative data.

Quantitative data were analyzed using descriptive statistics to investigate the relationship between variables; controlling for age, gender, marital status, level of education,

employee group, duration of residence in Qatar and former province of residence in Canada. Observed values were compared to expected values using Chi Square tests. Correlations were utilized to analyze the relationship between smoking behaviour and the various independent variables.

Qualitative data were analyzed by coding into central themes and calculating frequencies. The themes were not predetermined but emerged upon collection and organization of the data. Key words were identified as components of each of the central themes. Qualitative data were then organized according to classification of key words within central themes.

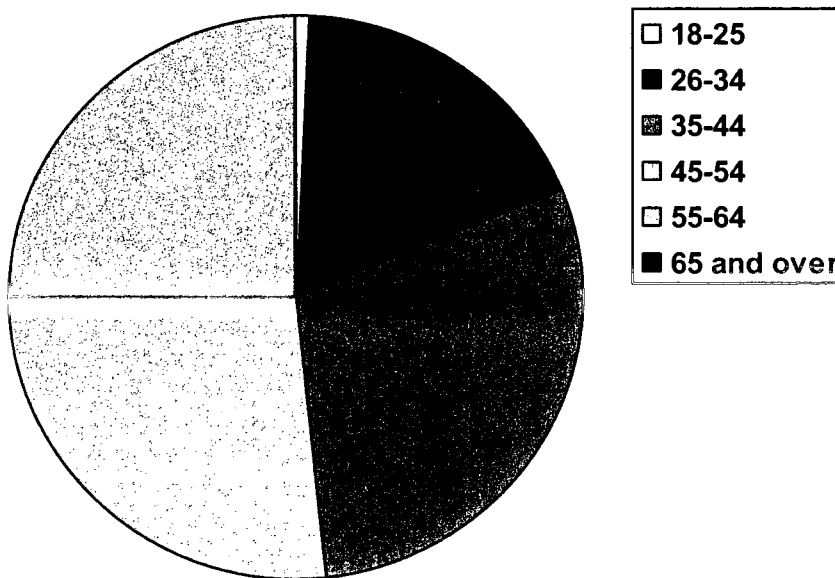
Chapter 4 – Results

4.1 Demographics of sample

Generally, the demographics of the sample reflect the demographics of the population studied (Canadian staff at the College of the North Atlantic-Qatar).

Most of the subjects (81%, 147/181) were over 35 years of age (Figure #1). No subjects were over 64 years of age.

Figure #1 – Age in years



The majority of subjects had lived in Qatar for longer than a year (77%, 139/181) and 24% (43/181) of the subjects lived in Qatar for longer than 3 years.

The most common Canadian province of residence immediately prior to moving to Qatar reflected the province of origin of the College. Over half of the subjects were from the province of Newfoundland-Labrador (56%, 101/181). All other provinces were represented in the sample, except for Prince Edward Island. Of the three Canadian territories, there was only one subject who reported Nunavut as a territory of residence (Table #1).

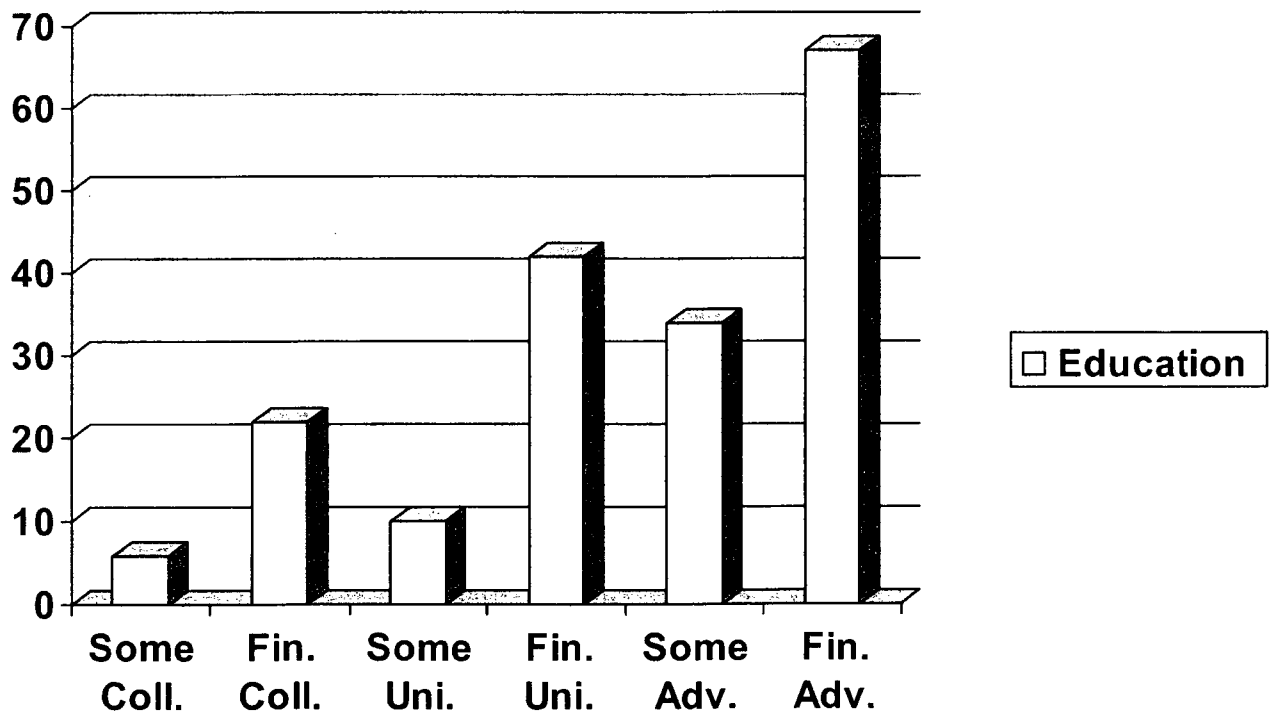
The sample contained a higher percentage of females (56%, 102/181). Most of the sample were married (71%, 128/181) with the remainder being single or divorced.

The level of education of the sample reflects the population of a post-secondary educational institution. A majority of the subjects (79%, 143/181) completed a university degree and were working on or completed an advanced degree (Masters or PhD.) (Figure #2).

Table #1 Province/Territory of Residence in Canada

PROVINCE / TERRITORY OF RESIDENCE IN CANADA	FREQUENCY	Valid Percent (%)	Cumulative Percent (%)
BC	20	11	9
AB	13	7	6
SK	4	2.2	1.8
MB	1	0.6	0.5
ON	19	10.4	8.8
QC	4	2.2	1.8
NB	2	1.1	0.9
NS	16	8.8	7.4
PE	0	0	0
NL	101	55.8	46.5
NU	1	0.6	0.5
NW	0	0	0
YU	0	0	0
Canadian, did not live in Canada prior to Qatar	33	n/a	15.4
Not Canadian	3	n/a	1.4
Total	217	n= 181 100	100

Figure #2 - Education Level (y = # subjects)



Most of the subjects were members of the teaching faculty at the College (75%, 135/181) with the remainder of the sample representing support staff (19%, 35/181) or the management team (6%, 19/181).

4.2 Public smoking in Qatar

The initial part of the survey investigated both smokers and non-smokers opinions about public smoking in Qatar. A preamble to the questions in this section informed or reminded subjects of the current legislation banning smoking in public places in Qatar; such as restaurants, cafes, bars and shopping malls.

When asked about compliance and enforcement of the ban on public smoking in Qatar, 88% of the subjects disagreed the ban was being followed or enforced (Figure #3). Most of the subjects (92%, 167/181) agreed that smoking in public places is more common in Qatar than where they lived in Canada (Figure #4). Chi square 'goodness of fit' test performed on both public smoking questions showed a statistically significant difference in responses compared to predicted (Chi square = 208.5 and 359.4, $df = 4$, $p < .001$). Fewer subjects, but still a majority (61%, 110/181) agreed that smoking is more common at work in Qatar compared to where they worked in Canada (Chi square = 37.5, $df = 4$, $p < .001$).

Figure # 3 – The ban on public smoking in Qatar is followed and enforced (y = % subjects)

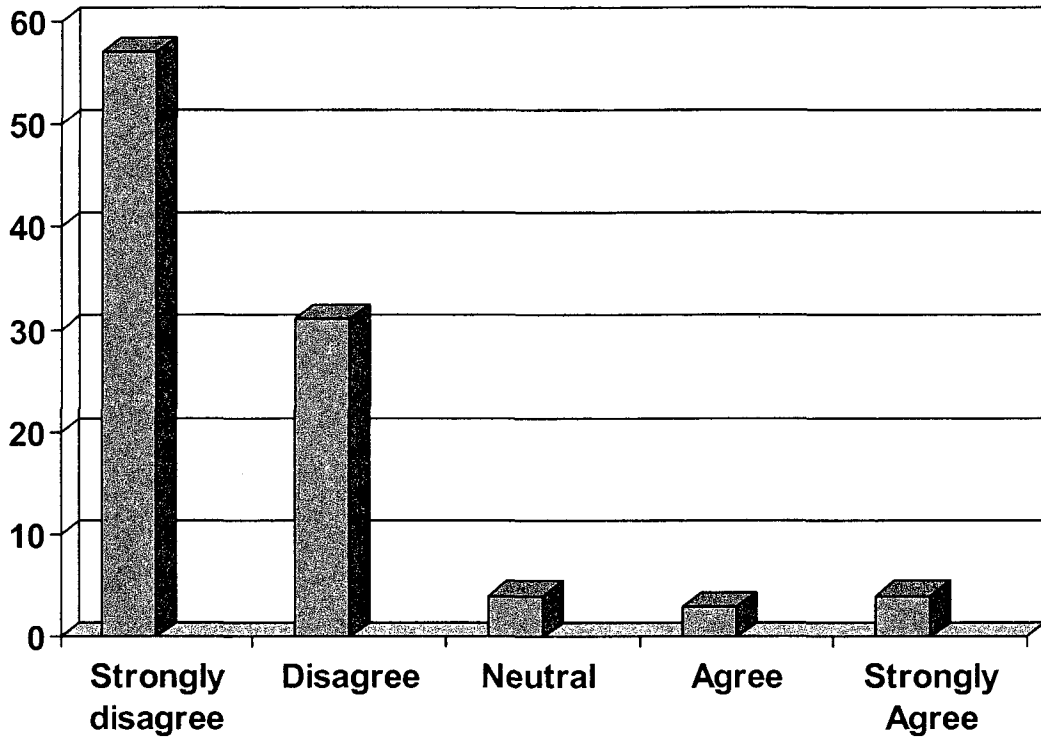
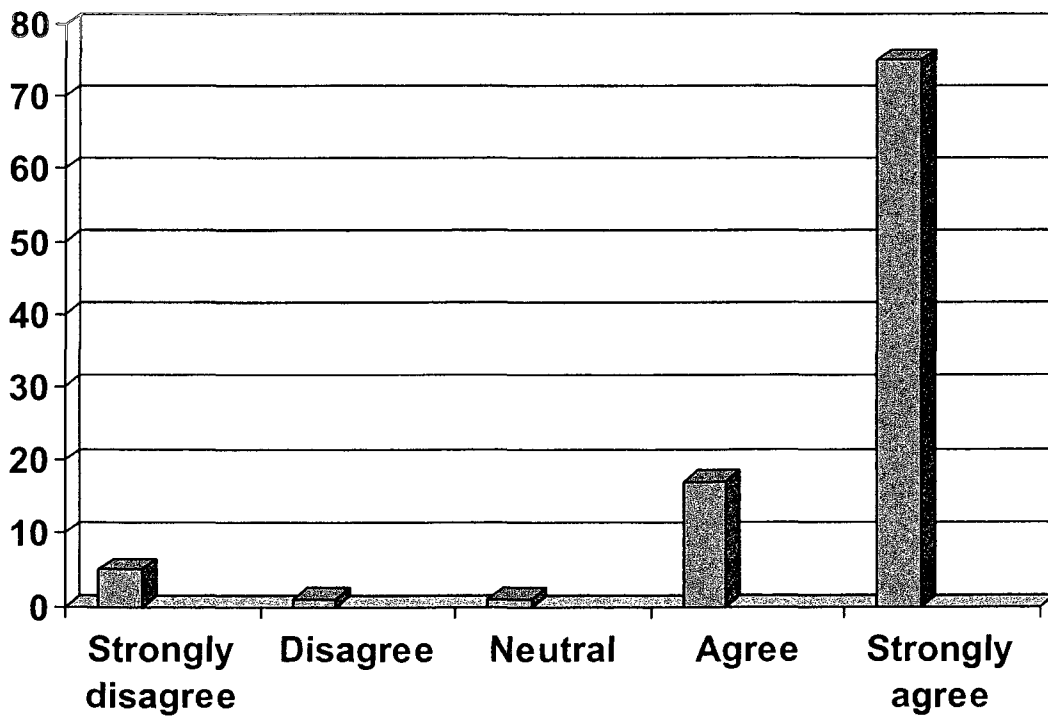


Figure #4 – Smoking in public places is more common in Qatar than where I lived in Canada (y = % subjects)



Subjects who were non-smokers were asked to complete an open-ended question about the effect of public smoking on their day-to-day life in Qatar. There were one hundred and forty-two responses to this question. A large majority (89%, 126/142) of the non-smoking subjects reported public smoking in Qatar as having a negative effect on their day-to-day life. Only 11% (16/142) of the non-smoking subjects reported no effect of public smoking on their lives in Qatar and no non-smoking subjects reported a positive effect of public smoking on their lives.

The qualitative data were coded according to four main themes, depending on the effect of public smoking on the subject's day-to-day life:

- social activities that are affected or impacted by public smoking
- anger or irritation due to the poor compliance and enforcement of Qatar's public smoking ban,
- issues related to smoking at the College, and
- health concerns due to public smoking.

Table #2 summarizes the qualitative data for the effect of public smoking on the day-to-day lives of non-smoking subjects.

The most common effect of public smoking on subjects' lives was anger or irritation due to a low compliance and enforcement of Qatar's public smoking ban. Just over half (52%, 74/152) of the respondents reported anger and irritation as a result of their unwanted exposure to cigarette smoke in public places. Public smoking also had an effect on non-smoker's lives when it came to social activities and decision-making as slightly fewer than half of the respondents reported this factor as the most important. Subjects reported avoiding public places or not going out to socialize at all due to public smoking.

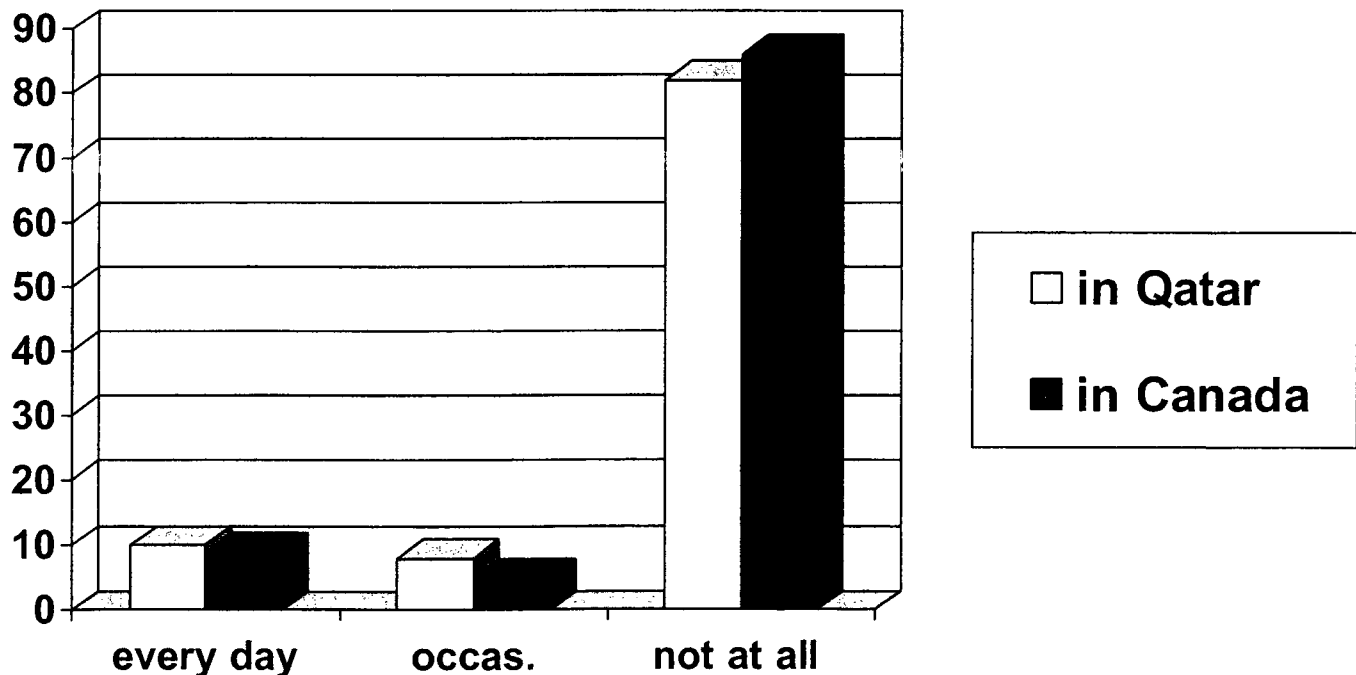
**Table #2 – Summary of qualitative data;
Effect of public smoking on day-to-day life of non-smokers**

Theme	Key words/phrases	Examples of Statements / Quotes	f	%
Anger / Irritation due to poor compliance/enforcement of public smoking ban	Annoying / irritating/ unpleasant / uncomfortable / anger / obnoxious / smoking ban ignored, not enforced, smoking beside/under a No Smoking sign	“I find the smoke irritating and uncomfortable”, “I find it particularly obnoxious in local cafes when people have the audacity to smoke immediately under the ‘No Smoking’ sign”, “it diminishes the quality of life”, “sitting in a restaurant and the patron beside me is smoking even though I’m in a non-smoking area”, “No Smoking signs are ignored”	74	52%
Social activities / Social decision-making	Going out / not going out, Eating/drinking at restaurants/cafes/bars, socializing, avoidance, stop going to places	“it makes me not want to go to restaurants”, “the people of Qatar smoke everywhere and a lot!”, “on a daily basis I have to leave public areas because someone has lit a cigarette near me”, “in restaurants you have to ask for non-smoking, however there still might be people smoking in this section.”	62	44%
College-related; public smoking on campus	Students , faculty, entrances to buildings / public smoking / busses, dirt / cigarette butts / smell	“having to walk through a cloud of smoke to get into a building”, “Inhaling second-hand smoke just walking around campus”, “No Smoking signs are not enforced at Building 3”, “No Smoking should be campus-wide”, “I am frustrated by the College’s lack of concern for the health of its’ employees”,	31	22%
Health	Concern for health, asthma, headache / migraine, pregnancy, allergies / sensitivity, sore throat / nose, coughing / breathing, children’s health	“it bothers me and I am worried about the effect on mine and my child’s health”, “my daughter has asthma and we have to constantly ‘defend her air’ by asking people not to smoke near us in places that are clearly marked as ‘Non-smoking’”, “the smoke really bothers me. I have become very sensitive to smoke”, “I have allergic reactions to smoke and it bothers me to be around people who smoke”	28	20%

4.3 Smoking prevalence

When subjects were asked about their current smoking behaviour, 18% (32/181) stated that they smoked cigarettes either daily or occasionally (Figure #5). This value was greater and significantly different than the 14% (25/181) of the subjects who cited the same behaviour in Canada (Chi Square 104.5, $df= 1$, $p < .001$). Most of the increase was with occasional smokers, as only one subject stated they smoked daily in Qatar compared to when they were living in Canada. A large percentage of the subjects (82%, 149/181) stated they did not smoke at all in Qatar. A larger percentage of subjects stated they were non-smokers in Canada (86%, 156/181) as compared to in Qatar.

Figure # 5 – In Canada and at the present time, did/do you smoke cigarettes every day, occasionally or not at all? (y = % subjects)



Utilizing the Canadian Tobacco Use Monitoring Survey (Health Canada, 2007) definition of a current smoker as a person who has smoked at least one cigarette in the past 30 days, 16% (28/181) of the subjects were classified as current smokers.

Smoking status was analyzed when controlling for various demographic groups.

Smoking status was found to have a statistically significant relationship with marital status (Chi square = 4.703, df = 1, p = .030). If a person was single there was a higher chance they would be a smoker. Over 27% (13/48) of single or divorced subjects were current smokers while only 13% (15/113) of married subjects were smokers.

Education was also significantly related to smoking status. As a subject's education level increased, there was a lower probability they would be a smoker (Chi square 7.089, df = 2, p = .029). Subjects with the highest level of education, a masters or doctorate degree, had a smoking prevalence of approximately 13%. Subjects with a bachelor's degree or a college diploma had a smoking prevalence of 12% and 19% respectively.

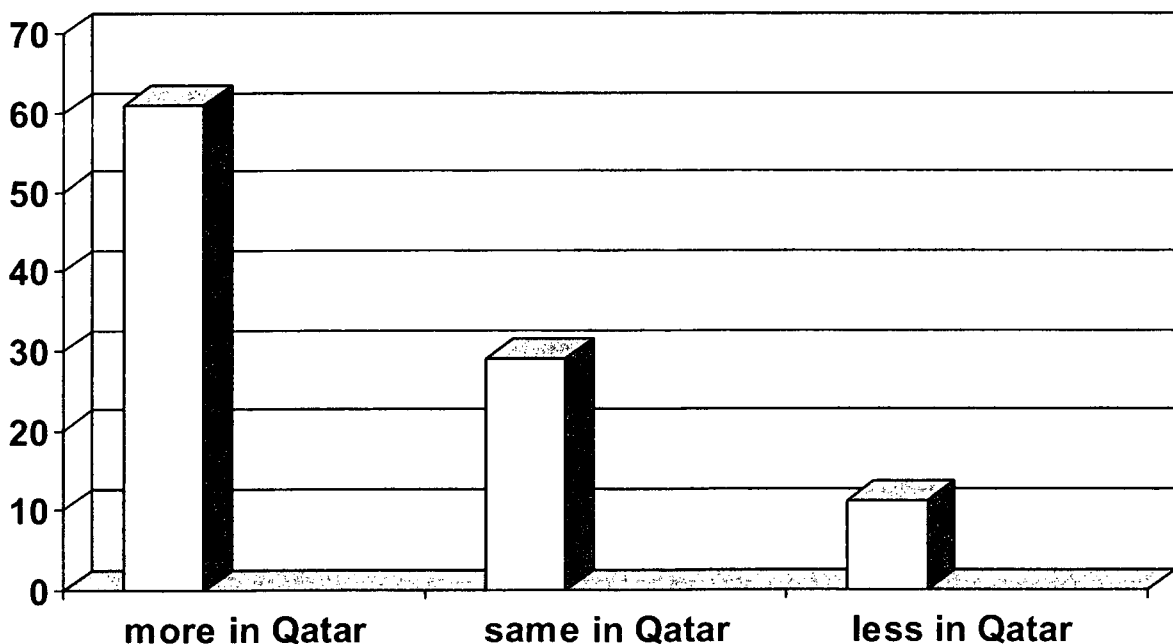
Age, gender, duration of residence in Qatar, province of residence in Canada, and employee group were all found to have no relationship with smoking status.

4.4 Tobacco consumption

The majority of current smokers who responded (52%, 14/27) indicated they smoke ten or less cigarettes a day. Only 18% of the smokers who responded (5/27) stated they smoke more than a standard package of twenty cigarettes.

When asked about how their smoking consumption in Qatar compares to consumption when they lived in Canada, the majority of smokers (61%, 17/28) stated they smoke more cigarettes in Qatar than they did when they lived in Canada (Figure #6). Almost half of the smokers who responded stated they smoked more at work in Qatar (47%, 8/17) as compared to at work in Canada.

Figure # 6 - Compared to when you lived in Canada, are you now smoking more, about the same amount or less? (%)



Subjects who reported smoking more cigarettes in Qatar compared to when they lived in Canada were asked an open-ended question (#19) which stated: “Why do you think you smoke more in Qatar?” The qualitative data were coded according to four main themes depending on reasons cited by subjects for their increase in smoking consumption in Qatar:

- price
- social reasons
- public smoking in Qatar
- stress

Table #3 summarizes the qualitative data collected from smokers reporting why they thought they smoked more in Qatar.

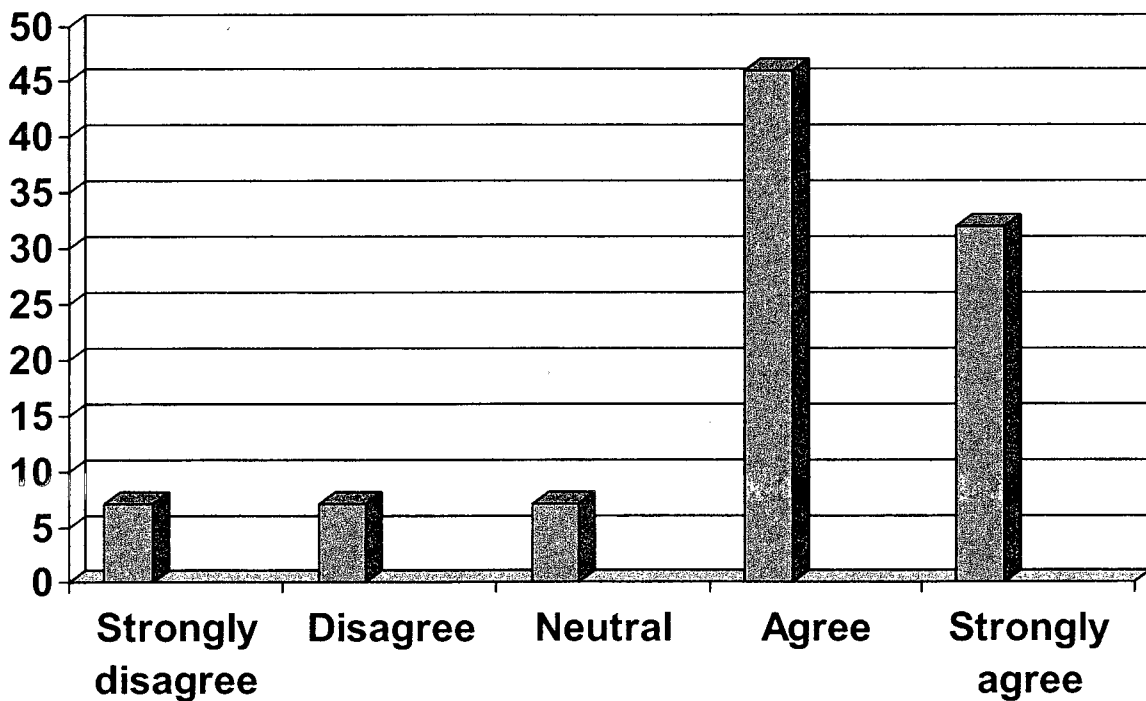
Decreased price and social behaviour or feelings of isolation were the most common reason cited by smokers for an increase in their smoking consumption while in Qatar. Smokers reported that the increase in public smoking and stress were less common reasons for an increase in their tobacco consumption.

**Table #3 – Summary of qualitative data - Question #19;
Reasons reported by smokers for why they smoked more in Qatar**

Theme	Key words/phrases	Quotes	f	%
↓ Price / Cheap	Cheap / price / less expensive /	“cigarettes are very cheap”, “much cheaper”, “less expensive”, “price”	10	63%
Social reasons / Isolation	Social / bored / socializing more (in Qatar) / social behaviour / free time	“because I am socializing more and it’s easy to light up wherever you are in Qatar”, “I am around more smokers than when I was in Canada”, “more free time”, “social behaviour has changed”, “I do it as a social thing”, “when I spend time at home cigarettes become your friend”, “bored. Family not here”	10	63%
↑ public smoking / easier to smoke	Acceptable / more public smoking / easy to smoke /	“more people here smoke so it seems more acceptable to society”, “smoking is more acceptable in Qatar”, “in Canada you don’t have the option to smoke in public places nor is it socially acceptable to smoke”, “I enjoy smoking and it is far less demonized here in Qatar than it is in Canada”,	6	38%
Career and personal stress	Stress / pressure / work / busy	“I smoke when I’m very busy with work and get stressed”, “more stress”, “I also find the job stressful at times”	5	31%

Smokers were then asked how public smoking affected their own smoking behaviour. A large majority of smokers (78%, 22/28) agreed that when people are smoking around them in public places (restaurants, cafes, bars, shopping malls, etc.) they usually smoke more (Figure #7) (Chi square value =18.786, df = 4, $p < .001$). Slightly fewer (64%, 18/28) of the smokers surveyed felt that smoking in their work environment caused them to smoke more (Chi square value = 12.0, df = 4, $p = .017$).

Figure #7 - When people are smoking around me in public places I will usually smoke more (y = % subjects)

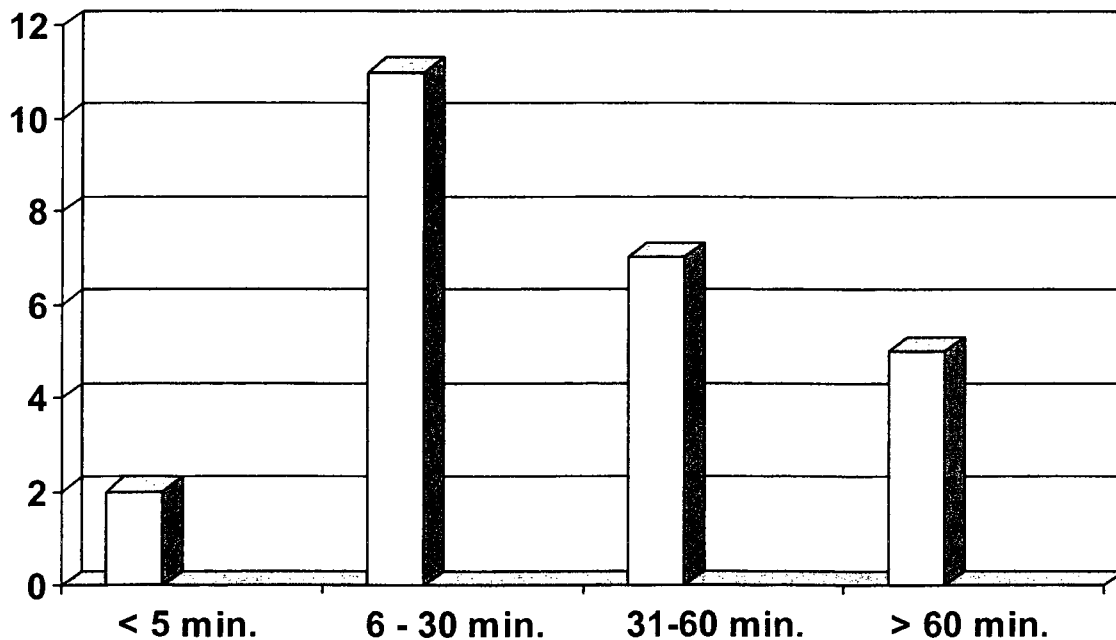


A majority (61%, 17/28) but not statistically significant number of the current smokers stated they smoked more in public places in Qatar as compared to when they lived in Canada (Chi square = 5.571, df = 4, p = .234).

4.5 Dependence

Just over half of smokers who responded (13/25, 52%) revealed they smoke their first cigarette of the day within 30 minutes of waking up and 80% (20/25) of smokers have their first cigarette within one hour of waking up in the morning (figure #8). The fact a majority of smokers have their first cigarette within 30 minutes of awakening indicates a low-moderate level of dependence on nicotine. However, a majority of smokers (59%, 15/25) stated they did not smoke their first cigarette in the morning sooner in Qatar as compared to in Canada.

Figure # 8 - How soon after you wake up do you smoke your first cigarette?
(y = # subjects)



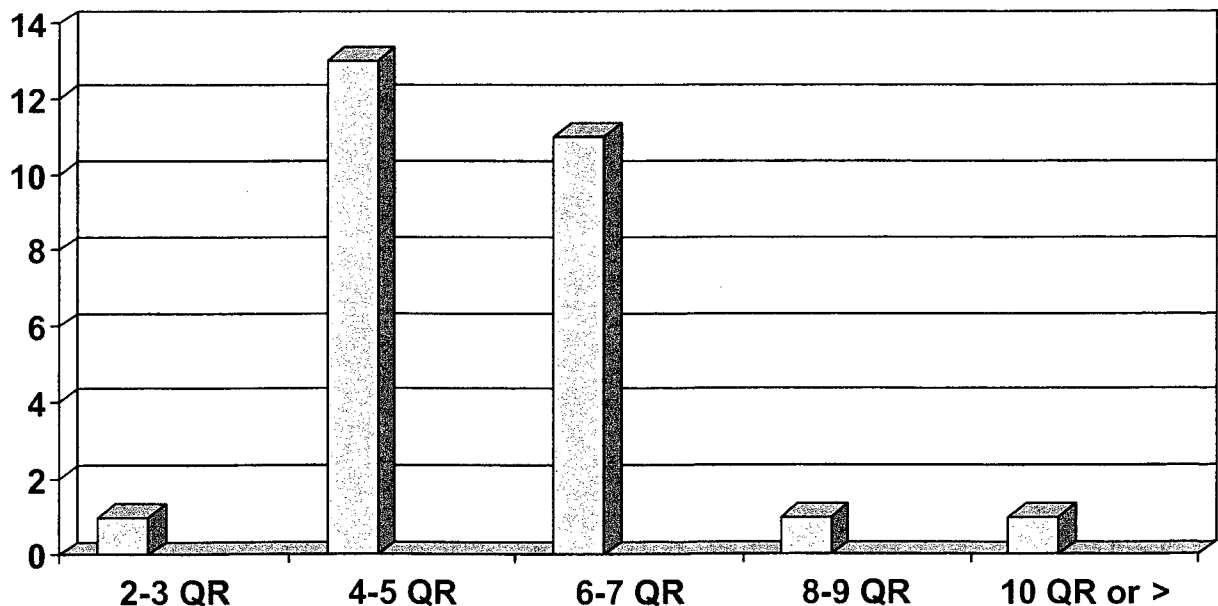
4.6 Desire to quit / Stages of Change

Just over half (54%, 15/28) of smokers indicated they are seriously considering quitting smoking cigarettes. Among the smokers seriously considering quitting smoking, there was an approximate equal distribution between those planning to quit in the next few months (53%, 8/15) and those planning to quit sooner, in the next month (47%, 7/15).

4.7 Cost of cigarettes in Qatar

Most smokers who responded (89%, 14/27) indicated they spend between 4-7 Qatari Riyals for a package of 20 cigarettes in Qatar (Figure #9). This value is equal to approximately \$1.30 – 2.30 Canadian dollars.

Figure # 9 - How much do you pay for a package of 20 cigarettes in Qatar?
(y = # Qatar riyals)



Chapter 5 – Discussion

5.1 Main Findings

The evidence from this study indicates a combination of lower prices for cigarettes and increased acceptance to public smoking contributes to a higher prevalence of smoking and increased consumption of tobacco among Canadians living in Qatar.

In fact, there is a significant increase in daily or occasional smokers while living in Qatar (18% 32/181) compared to when they previously lived in Canada (14%, 26/181). The relationship between smoking status and demographic factors were generally consistent with values for smokers in Canada. This study found males smoked more than females and single people smoked more than married people. Both of these findings are consistent with evidence from the Canadian Tobacco Use Monitoring Survey (CTUMS) of 2007 (Health Canada CTUMS, 2007). Also, this study showed results consistent with the findings from the CTUMS in reference to the relationship between smoking status and education level. In Canada, smoking prevalence decreases as education level increases. The CTUMS in 2006 found that 23% of people with a secondary school education were current smokers compared to 10% of people with a university degree (Health Canada CTUMS, 2006). The same relationship was found in this study, although subjects with an advanced degree (13%) or a bachelor's degree (12%) had a higher prevalence of smoking compared to people with the same level of education in Canada. However, as the sample population in this study is from a post-secondary institution, there was a higher education

level than the average in Canada which could contribute to this finding. Also, subjects cited many factors influencing their smoking behaviour, such as changes in social activities and environment, as reasons for an increase in smoking.

Perhaps more important than the increase in smoking prevalence is the increase in tobacco consumption. With a majority of current smokers reporting an increase in tobacco consumption, smokers are increasing their risk for smoking-related illnesses. Smokers were found to be sensitive to both price and public smoking. The evidence revealed smokers will smoke more often and consume more when the price is lower. This finding is consistent with the evidence from 1994 when a decrease in price in several Canadian provinces led to a slower decline in smoking and a more rapid increase in new smokers (Hamilton, 1997; Waller et al., 2003).

The evidence indicates there is an inverse relationship between tobacco control and smoking prevalence and consumption. As tobacco control decreased, with a drop in price and more access to public smoking, prevalence and consumption increased. This inverse relationship involves the same variables as in Canada, but exists in the opposite direction.

The fact Canadians have been found to be sensitive to a drop in price and an increase in access to public smoking supports current legislation of tobacco control in Canada. This study indicates that if current levels of tobacco control in Canada were decreased, there may be a subsequent increase in smoking prevalence and tobacco consumption. Although the tobacco companies will continue to campaign for a decrease in tobacco control

legislation, it is evident if the government complies by softening current tobacco control legislation; the public health of Canadians would be more at risk from smoking.

Smokers in this study also indicated their smoking behaviour is closely linked to their social behaviour. Many smokers reported consuming more tobacco due to socializing more in Qatar than previously in Canada. However, some smokers reported their increase in consumption of tobacco was due to being lonely or isolated from their normal social environment in Canada. Subjects commented that their cigarettes were their “friend” when they are at home alone.

The majority of subjects in this study were found to have their first cigarette at the same time of the day as they did in Canada. This factor indicates that dependence on nicotine is no greater in Qatar than in Canada. In fact, since 56% of Canadian smokers in Qatar report having their first cigarette within 30 minutes of awakening it indicates the same level of dependence on nicotine as in the general population in Canada. According to the Canadian Tobacco Use Monitoring Survey (CTUMS) of 2007, 54% of smokers have their first cigarette within 30 minutes of waking up in the morning (Health Canada CTUMS, 2007). This result is interesting because although a majority of smokers consume more tobacco in Qatar; their level of dependence is similar to that of smokers in Canada.

The smokers who stated they were planning to quit “soon – within the next 30 days” would be considered to be in the preparation stage. Those who stated they were planning

to quit “later – within the next 1-6 months” would be in the contemplation stage (Prochaska et al., 1992). Approximately half of the subjects were either in the preparation or contemplation stage of change in deciding to quit smoking. This level of desire to quit is very similar to that found by the CTUMS in 2007 (Health Canada CTUMS, 2007). So although there is an increase in prevalence and consumption in Qatar, the subjects still have a desire to quit at the same rate as the Canadian population. This is an indication that an effective smoking cessation program is needed either on the CNA-Q campus or in the local community.

There is strong evidence the level of tobacco control is less strict in Qatar compared to Canada. A vast majority of non-smoking subjects felt the compliance and enforcement of current bans on public smoking in Qatar is poor. The qualitative evidence from this study is consistent with the pilot survey conducted in Qatar by the researcher. Although Qatar is a signatory to the FCTC and has legislation banning public smoking, there is very poor compliance and enforcement of these regulations.

It is clear the government of the State of Qatar must improve enforcement of the current tobacco control legislation. Clearly, having a ban on public smoking is not enough to change the behaviour of smokers. The fact smokers continue to smoke in public places not only negatively affects their own health due to an increase in consumption, but also negatively affects non-smokers who must inhale the secondhand smoke in these public areas. Follow-up to the legislation with enforcement is essential. As the researcher found during the pilot survey of public venues in Qatar, only 20% of the sites had signage on

display indicating a ban on smoking (Pendergast, 2006). Enforcement is perhaps the most difficult component of tobacco control. But it is essential to ensure the benefit of a ban on public smoking.

In Canada, Health Canada's Tobacco Control Program has six regional offices across the country as well as the Office of Regulations and Compliance. Both of these bodies are responsible for the enforcement and compliance of the Tobacco Act. This department oversees the activities of the provincial and territorial tobacco inspectors across the country ensuring compliance with current legislation in the respective jurisdictions. The Tobacco Control Program is also involved in media and public awareness campaigns to ensure the message is relayed to the public and health professionals about current legislation on tobacco control (Health Canada, 2009). If the Public Health Department in Qatar were to implement a similar system of enforcement and public awareness perhaps compliance with the current legislation would be improved.

Another component of the FCTC is taxation on tobacco products. Currently the State of Qatar has minimal taxation on most commercial products, tobacco included. As a signatory of the FCTC, the government in Qatar must uphold its obligations and levy a greater tax on tobacco products. The survey population of Canadians living in Qatar in this study is a very small proportion of the total residents of Qatar. In order to improve the public health of all residents in Qatar, the government must increase tobacco control legislation and enforcement.

Non-smokers in this study indicated a great deal of frustration and anger with the lack of compliance and enforcement of tobacco control in Qatar. It is likely that other non-smokers in the country have similar frustrations with the current situation. So the increase in public smoking in Qatar not only contributes to smokers smoking more and former smokers to possibly start smoking again, but it also contributes to a poor quality of life for non-smoking residents of the country.

The evidence from this study also reveals subjects are exposed to more smoke in their work environment. CNA-Q does have current regulations regarding public smoking but non-smoking subjects indicated frustration with an increase in exposure to secondhand smoke at work in the college campus. Also, smokers reported they smoke more at work in Qatar than at work previously in Canada.

CNA-Q should implement more strict tobacco control regulations on its campus. More importantly, to ensure compliance to the regulations, there should be a comprehensive enforcement strategy. As a Canadian college in the Middle East, CNA-Q has an opportunity to be a regional leader in tobacco control. As the evidence indicates, if smokers have more access to public smoking they will smoke more. If smokers smoke more, non-smokers will have an increase in frustration due to exposure to secondhand smoke. By implementing and enforcing more strict tobacco control regulations, the College can help to ensure the public health of its population, both smokers and non-smokers.

The College should also provide new staff with an education session on the tobacco control situation in Qatar. This would help to inform the new residents of Qatar about the potential influence of the less strict tobacco control environment on their smoking behaviour. CNA-Q should also provide a smoking cessation program to counteract the resultant increase in smoking prevalence and consumption among its staff.

5.2 Implications for future research

Further research is needed on the effect of lower cigarette prices and more public smoking on smoking behaviour. The evidence from this study indicates lower cigarettes prices and more public smoking increases smoking prevalence and consumption among the study sample. However, smokers did indicate social behaviour was an important factor in their increase in consumption. In order to investigate the effect of changes in a person's social environment, additional research could be done to investigate if Canadians moving to a country with similar tobacco control policies to Canada also experience a change in smoking behaviour. For example, a study of Canadians who move to the United States, the European Union or Australia would provide this evidence.

The design of this study was cross-sectional. Additional research could be conducted using a longitudinal design. CNA-Q staff could be studied at various time intervals during their residence in Qatar to investigate the long term effect of the tobacco control environment in Qatar on their smoking behaviour.

As most staff at CNA-Q return to Canada after a 3-5 year contract, additional longitudinal research could be conducted on subjects to investigate if their smoking prevalence and consumption decreases when they move back to Canada. With higher cigarette prices and less public smoking in Canada, it would be interesting to investigate the effect on smoking behaviour when subjects move back to Canada from Qatar.

This study focused on Canadians only. Additional research could be done to investigate other expatriate communities in Qatar or other countries in the WHO Eastern Mediterranean region. It would be interesting to discover if citizens of other countries with similar tobacco control as Canada experience the same change in smoking behaviour as the subjects in this study.

A case-control study could be conducted comparing the smoking behaviour of staff at the Canadian campus of the College of North Atlantic with that of the staff at the Qatar campus of the College of the North Atlantic. The subjects in both cohorts would be similar in most respects except for their residence and tobacco control environment.

Over half of the smokers in this study reported a desire to quit smoking in the near future. It would be interesting to collect data on the success of quit attempts in the less strict tobacco control environment of Qatar and compare the success rate to quit rates in Canada. With cheaper prices for cigarettes and increased public smoking in Qatar, it would be interesting to investigate if cessation success rates are lower than in Canada. If this is the case, public health officials and CNA-Q administrators should be aware and

provide focused cessation programs to counteract the effect of the tobacco control environment in Qatar.

5.3 Limitations

This study was cross-sectional in design. The researcher used non-parametric sampling with a convenience sample. Therefore, the subjects are not representative of the Canadian population and the results from this study can not be transferred to the Canadian population as a whole.

The sample of smokers in this study was 28/181. This represents a relatively small sample of smokers so the results of this study cannot be inferred on the population as a whole.

Chapter #6 – Conclusion

This study revealed a decrease in tobacco control resulted in an increase in smoking prevalence and tobacco consumption. Canadians smoked more when living in Qatar and an environment of lower cigarette prices and more exposure to public smoking. This study clearly indicates support for Canada's current high cigarette prices and strict tobacco control policies to maintain the current trend of decreasing smoking prevalence and consumption.

Qatar is not implementing effective tobacco control policies as dictated by the World Health Organizations Framework Convention on Tobacco Control (FCTC). Enforcement of current tobacco control legislation must be implemented to ensure compliance as well as the public health and safety of its residents. The College of the North Atlantic-Qatar should also be aware of the effect of Qatar's environment on the smoking behaviour of Canadians. In response to Qatar's less strict tobacco control environment, CNA-Q should raise awareness of the potential effect on its staff as well as consider providing on-site smoking cessation programs. CNA-Q should also implement and enforce more strict public smoking bans to help protect the health and safety of its staff.

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APPENDICES

APPENDIX I – Cover Letter

Research Study: Smoking behaviour – A survey of Canadians in Qatar
Researcher: Noel Pendergast
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Hello,

My name is **Noel Pendergast**. In addition to being a Health Science faculty member at the College of the North Atlantic-Qatar (CNA-Q), I am a student in the Masters of Public Health program at Lakehead University, Thunder Bay, ON, Canada.

I am interested in smoking behaviour in Qatar. Especially interesting to me is how Canadians are affected by the degree of smoking in public places and changes in cigarette prices.

Participation in this study is **voluntary**. Even if you consent to participate in the survey, you can stop at any time.

The study consists of a survey which will take no more than 15 minutes to complete. All information you provide will be **anonymous** and **confidential**.

Along with questions related to demographic information; including your age, gender, marital status and level of education; you will be asked to comment on your current opinions on smoking and your smoking behaviour (if applicable). Smoking behaviour will be assessed by asking questions about your current smoke status, how many cigarettes you normally smoke and how much you smoke in work and leisure environments.

Upon completion of the survey, the data will be summarized and analyzed. The results will be included in a research paper which may be published. Participants' names will not be included in the paper and subjects will not be identifiable in any way. The study results and research paper will be available to you upon request. The anticipated completion date for the research paper is December 2007.

The raw, anonymous data from the study will be stored at Lakehead University for seven (7) years. The study results will give an indication of the effect cigarette prices and tobacco control policies have on current smoking behaviour. The information from this study may also be used by CNA-Q administration to inform future employee wellness initiatives. Public health officials of the State of Qatar may also use this information to examine current enforcement and follow-up to legislation which exists to restrict or prohibit smoking in public places.

THANK YOU for your time and cooperation. If you have any questions now or at any time regarding this study, please don't hesitate to contact me at the email or phone number listed above.

APPENDIX II – Informed Consent

1. I understand my participation in this survey is voluntary, can be completed at a time convenient for me and I can withdraw at any time.

Yes No

2. I understand this survey is anonymous and confidential.

Yes No

3. I understand that I will in no way be identified in the research paper summarizing the data, available to me and the general public.

Yes No

4. I understand the study results may help to guide College of the North Atlantic-Qatar wellness-based initiatives.

Yes No

5. I understand there is no known physical risk to the survey.

Yes No

If the subject responds “yes” to a question – they will move on to the next question. If the subject responds “no” to a question – they will be considered to have not given consent and will be exited from the survey.

If the subject responds “yes” to all 5 Informed Consent inquiries, he/she will be considered to have given informed consent and will progress to the questionnaire.

APPENDIX III - Questionnaire

Initial questions of the survey will be used to identify candidates who meet the inclusion criteria.

6. What is your **age** in years, as of today?

- 17 or younger 18 – 25 26-34 35-44 45-54 55-64 > 65

If candidates respond '17 or younger' they will not meet the inclusion criteria.

7. How many **months** have you **lived In Qatar**?

- < 3 months 3-6 months 7–12 months 13-24 months
 25-36 months > 36 months

If candidates respond '<3 months' they will not meet the inclusion criteria.

8. Immediately prior to moving to Qatar, what was your Canadian **province or territory of residence**?

- BC AB SK MB ON QC
 NB NS PE NL YK NT NU
 I did not live in Canada immediately prior to moving to Qatar
 I am not a Canadian citizen

If candidates respond 'I did not live in Canada immediately prior to moving to Qatar' or 'I am not a Canadian citizen' they will not meet the inclusion criteria.

If any of the candidate's responses do NOT meet the inclusion criteria he/she will be exited from the survey, thanked for their time, and informed the researcher is not looking for their information at this time.

If the candidate's responses all meet the inclusion criteria, he/she will be directed to the survey.

Please place a check mark in the box beside the response that is true for you.

Demographics

9. What is your **gender**?

- Male Female

10. What is your **marital status**?

- Single Married Divorced Other

11. What is the **highest level** of **education** you have attained?

- some High School
- completed High School
- some Community / Technical College
- completed Community / Technical College
- some University or Teacher's College
- completed University or Teacher's college
- some advanced degree (e.g. Masters or Phd.)
- completed advanced degree (e.g. Masters or Phd.)

12. Which **employee group** do you belong to at **CNAQ**?

- Faculty Support Staff Management Other

13. *Public Smoking*

Qatar currently has legislation which prohibits smoking in public places such as restaurants, cafes, bars, shopping malls, etc.

With this in mind, to what extent do you agree or disagree with the following statements:

The ban on smoking in public places is **followed and enforced in Qatar.**

- Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

Smoking in public places (restaurants, cafes, bars, shopping malls, etc.) is more **common in Qatar** than where I lived in Canada.

- Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

Smoking at work is more **common in Qatar** than where I lived in **Canada.**

- Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

14. Smoking Status

When you **lived in Canada** prior to moving to Qatar, did you **smoke cigarettes every day, occasionally or not at all?**

- Every day Occasionally Not at all

At the **present** time, do you **smoke cigarettes every day, occasionally or not at all?**¹

- Every day Occasionally Not at all

15. In the **past 30 days**, did you smoke **any** cigarettes?¹

- Yes No

If the subject responds 'YES' to question #15 he/she will continue to the next section of the survey for current smokers.

If the subject responds 'NO' to question #15 he/she will be asked the following open-ended question and then will be exited from the survey and thanked for their time in completing the first part of the survey.

Please describe how public smoking affects your day-to-day life in Qatar:

Current smokers

16. On a typical day, **how many cigarettes** do you **smoke**?²

- 10 or less 11-20 21-30 31 or more

17. Compared to when you **lived in Canada** prior to moving to Qatar, would you say you are **NOW** smoking more, less or about the same amount?²

- more in Qatar less in Qatar about the same don't know

Prior to moving on to question #14, if the subject responds 'more in Qatar' to question #17, he/she will be asked the following question:

Why do you think you smoke more in Qatar?

18. To what extent do you agree or disagree with the following statements:

When people are **smoking around me** in my **work environment** I will usually **smoke more**.

- Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

When people are **smoking** around me in **public places** (restaurants, cafes, bars, shopping malls, etc.) I will usually smoke more.

- Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

I **smoke** more in **public places** (restaurants, café, bars, shopping malls, etc.) in **Qatar** than I did when I lived in Canada.

- Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

19. I **smoke more** in my **work environment** in **Qatar** as compared to my work environment in **Canada**.

- Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

Prior to moving on to question #19, if the subject responds 'agree' or 'strongly agree' to question #18, he/she will be asked the following question:

Why do you think you smoke more at **work** in Qatar?

20. **How soon** after you **wake up** do you smoke your **first cigarette**?³

- within 5 minutes 6-30 minutes 31-60 minutes after 60 minutes

21. **In Qatar** do you smoke your **first cigarette of the day SOONER** than you did when you lived in **Canada**?

- Yes No don't know

22. Do you **smoke more frequently** during the **first hours** after awakening than during the rest of the day?³

- Yes No don't know

23. Which **cigarette** would you **hate most** to give up?³

- The first in the morning Any other

24. Are you **seriously** considering **quitting smoking cigarettes**?

- Yes No don't know

If a subject responds "yes" to question #23, they will be asked the following question:

When are you planning to **quit**?

- soon (within 30 days) later (i.e. within the next 1-6 months)
 much later (i.e. after 6 months) don't know

25. What **brand of cigarettes** do you normally smoke now in **Qatar**?
(drop down menus)

Camel	Dunhill	Gitanes Blondes	Gitanes Blondes Mild	Gitanes Blondes Lights	Gitanes Blondes Ultra Lights
L & M filter	L & M Ultra Light	L & M Light	Marlboro	Marlboro Lights	Merit One
Merit Ultra Light	Rothmans	Salem	Silk Cut Lilac	Silk Cut Silver	No Regular Brand
Davidoff	L&M Menthol	Other			

26. How much do you **pay** for a **package of 20 cigarettes** in **Qatar**?

- 2-3 QR 4-5 QR 6-7 QR 8-9 QR 10 QR or greater

27. What **brand of cigarettes** did you normally smoke when you lived in Canada? (*drop down menus*)

Belmont	Craven A – King	Craven Menthol – King	DuMaurier – King	DuMaurier – Regular
DuMaurier – Light King	DuMaurier – Light Regular	DuMaurier – Extra Light King	DuMaurier – Extra Light Regular	DuMaurier – Ultra Light King
DuMaurier – Ultra Light Regular	DuMaurier – Special King	DuMaurier – Special 100	Export ‘A’ – Regular	Export ‘A’ – Medium Regular
Export ‘A’ – Light Regular	John Player’s – Special	Matinee – Extra Mild King	Matinee – Extra Mild Regular	Matinee – Slims King
Number 7	Player’s – Light King	Player’s – Light Regular	Player’s – Regular	Player’s – Extra Light King
Player’s – Extra Light Regular	Player’s – Light Smooth	Rothmans – King	Rothmans – Special Mild King	No Regular Brand
Other				I did not smoke in Canada

References – Questionnaire

¹Canadian Tobacco Use Monitoring survey (2005 Cycle 1) questionnaire. Health Canada. Retrieved 20 November 2006 from http://www.hc-sc.gc.ca/hl-vs/tobac-tabac/research-recherche/stat/ctums-esutc/index_e.html on 11/21/2006.

² Statistics Canada (1995) Special Surveys Division: Survey on Smoking in Canada, Microdata user’s guide. Retrieved 20 November 2006 from http://www.statcan.ca/english/sdds/document/4409_D2_T1_V1_E.pdf.

³Fagerstrom Test for Nicotine Dependence. Heatherton TF, Kozlowski LT, Frecker RC, Fagerstrom KO. The Fagerstrom Test for Nicotine Dependence: A revision of the Fagerstrom Tolerance Questionnaire. *British Journal of Addiction* 1991; 86:1119-27.