An investigation into the perceptions of male smokers and health care professionals in the smoking cessation clinics in Riyadh on the Tobacco Control Program in Saudi Arabia

by

Khaled Al-Turki

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Abstract

Aim: The aim of this dissertation is to produce an original piece of investigative research into perceptions of smoking cessation services provided by the TCP in the Riyadh region.

Objectives: In order to realise this aim, the dissertation has the following objectives:

1. To investigate perceptions of the extent of the health care (smoking cessation) services provided under the TCP for smokers in the Riyadh region.

2. To investigate the perceptions of male clients and health care services professionals in the smoking cessation clinics in this region, on the effectiveness of the clinics in raising awareness of the dangers of smoking, in order to encourage smokers to quit.

3. To identify the perceived strengths and limitations of health care (smoking cessation) services provided for smokers in the Riyadh region specifically as a platform for developing those strengths in the future.

Design: Primary data was collected through questionnaires administered to male clients attending the smoking cessation clinics in Riyadh, Saudi Arabia, and professional staff working in those same clinics. The views of respondents represent their individual subjective experience of one specific aspect of an objective social experience, in this case the functioning of the Tobacco Control Program.

Methods: A questionnaire was devised based on the policies and activities of the Tobacco Control Programme in Saudi Arabia. Convenience sampling was used, conducting the survey among 500 male clients attending the smoking cessation clinics in Riyadh and 30 staff in the clinics. The sampling was purposive, seeking to obtain the views of service-users and service-providers in the clinics, as those who would be expected to be more informed about the Tobacco Control Programme rather than a random sample drawn from the general population, such as a household survey. The Pilot Study was conducted in a smoking cessation clinic run by an anti-smoking charity in Riyadh.

Results: The results obtained from both sets of questionnaires indicated in Sections A and B that respondents considered that the Tobacco Control Program was actively engaged in a series of activities relating to tobacco control, in raising awareness of the hazards of smoking and providing treatment. Responses in Sections C and D suggested that clients and staff

perceived that the Tobacco Control Program was operating effectively, despite some difficulties occasioned by a lack of resources.

Conclusions: The level of satisfaction with the performance of the Tobacco Control Program indicated in the responses was high. The uniformity of the responses may be responsible due to two factors – a relative lack of cultural diversity among respondents, and limitations of the study itself in overcoming potential problems of reporting bias. Given the setting of the study and the methods chosen, this may have resulted in a measure of unwillingness to criticise aspects of the Program. Nevertheless, as the first study of satisfaction with the TCP since its inception in 2002, valuable lessons will be learned for future surveys to obtain data, perhaps based more closely on surveys such as those conducted in the UK to measure satisfaction with the NHS. A more standardised international approach should, therefore, be the way forward in terms of research design and methods.

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Chapter 1

Introduction

1.1. Worldwide prevalence of smoking and mortality

The figures produced by the World Health Organization (WHO) indicate that a total of 57 million deaths occurred in the world in 2008 (WHO, 2010 [iii]). Of these deaths, the WHO reports that 63% (36 million) were due to non-communicable diseases (NCDs), principally cardiovascular diseases, diabetes, cancer and chronic respiratory diseases. They are also the most frequent cause of death in the WHO Eastern Mediterranean region.

Out of these NCDs, the WHO attributes 4.9 million deaths a year worldwide to tobacco use (WHO, 1999). Using lung cancer mortality as an indirect marker, Ezzati and Lopez (2004) arrived at a similar calculation of 4.83 million premature deaths annually as a result of smoking. This figure is predicted to rise to >10 million by 2030 if the current trend continues (Peto & Lopez, 2001). Ross & Stoklosa (2012) give a projection of > 8 million deaths due to smoking worldwide by 2030. Almost 70% of these deaths will be in developing countries (WHO, 1999). Although the main burden of this epidemic is taking place in developing countries, most treatment research and management efforts have addressed developed nations (Jha & Chaloupka, 2000; Abdullah & Husten, 2004; Ezzati & Lopez, 2003).

These projections, it must be remembered, refer to predicted future trends. On the basis of current consumption patterns, the predicted figures cited above are supported by Jha (2009; 2012). He calculates that between 5 and 6 million people worldwide currently die from tobacco use, that is to say 20% of all adult male and 5% of all adult female deaths over age 30. Jha (2012) calculates that there will be approximately 400 million deaths among adult smokers between 2010 and 2050. At least half of these will die between ages 30 and 69.

White (2007) reviewed epidemiological findings from a number of (mainly US) studies, finding that the data overwhelmingly demonstrated that smoking is one of the most significant causes of cardiovascular mortality and morbidity worldwide. Behavioural risk factors, which include tobacco use, are responsible for approximately 80% of coronary heart disease and cerebrovascular disease (WHO, 2010[iii]). There is significant corroborative evidence linking smoking as a risk factor for both fatal and non-fatal heart attack and stroke (for example: US Dept. of Health & Human Services, 2000; Teo et al, 2006; Jha, 2012).

Statistics have been produced in a number of countries on mortality attributable to smoking. Most risk data come from high-income countries. Slama (2008) notes that male rates of

cardiovascular diseases and cancers related to smoking in such countries are now declining in the post-1970 period. The death of some smokers, as well as cessation, account for this decline, accompanied by lower initiation rates of later cohorts. In the USA, tobacco use is the leading preventable cause of death (CDC, 2008). At the national level, Fenelon and Preston (2011) report similar findings, also using mortality from lung cancer as an indicator. In England, in 2009 an estimated 81,400 deaths of adults aged 35 and over were attributable to smoking – 18% of all deaths in this age group (HSCIC, 2011). Combining WHO statistics for the year 2000 in developing countries (among which they include Saudi Arabia), Ezzati & Lopez (2004) estimate the following major factors in the distribution of smoking-attributable mortality: cardiovascular disease 27.8%; chronic obstructive pulmonary disease 27.2% (COPD); lung cancer 13.6% and other respiratory diseases 12.8%.

In terms of cancer, lung cancer is the UK's biggest cancer killer and smoking causes 90% of lung cancers in men and 86% of cases in women (NHS, undated, reviewed 2013). Hence a number of studies calculate smoking mortality based on lung cancer deaths. Based on UK national statistics and two case-control studies centred around 1950 and 1990, Peto et al (2000) demonstrate the relation between smoking prevalence and lung cancer mortality.

COPD and the number of people with COPD is still rising in most countries among both men and women. However, at least 40 years are necessary after quitting in order to reduce risks by half. The majority of former smokers today live in high-income countries but many of them will still have COPD (Slama, 2008). In the case of COPD in particular, it must be noted that mortality figures may under-represent the extent of the problem. Approximately 3 million people annually die due to COPD, but the WHO estimates that less than one third of new cases with the disease are diagnosed (WHO, 2007).

The long delay between the initiation of persistent smoking and the death rates to which it contributes some decades later adds to public confusion about the risks. The extent of the benefits to be gained by quitting also need to be more widely known. Taking these factors into account, Lopez et al (1994) proposed a four-stage model of the tobacco epidemic in developed countries. It must be noted here that the World Bank (2012) classifies Saudi Arabia as a high-income country, and – on the basis of this classification - the model is relevant to tobacco control policy in the country. The model contains three variables: prevalence (the proportion of regular smokers in the population); consumption (the number of cigarettes smoked per adult in a given period) and mortality attributable to smoking. From

the limited statistical data for Saudi Arabia, it is only possible to tentatively attribute the smoking epidemic in the country to a stage for which most of the criteria appear to match. After an initial stage in which smoking prevalence is low, Lopez et al (1994) suggest some criteria for Stage 2 which characterise the current situation of tobacco use in Saudi Arabia: smoking among men continues to rise rapidly (this may reach a peak of over 50%); smoking prevalence among women typically lags behind that of men; prevalence among different socioeconomic classes is similar (see Table 1.3); tobacco control activities at this stage are not well-developed; education and information on the risks of smoking are unsystematic and sporadic; mortality rates due to smoking are already starting to rise. In placing Saudi Arabia in this stage, the research by AlBedah & Khalil (2013) is particularly valuable.

1.2. Prevalence of smoking and mortality in Saudi Arabia

There is no single authoritative figure that can be given for smoking prevalence, despite the number of surveys that have been carried out. Bassiony (2009) reviewed 34 studies conducted between 1987 and 2008 in Saudi Arabia, finding a range of different figures given. Sampling differences explain some of the divergences in the results. Divergences in sampling included different sample populations in terms of factors such as gender, region or age and different criteria applied for current smoking. Ten of these studies, for example, investigated the prevalence of smoking among adolescents.

To these considerations, Jarallah et al (1999) add that, because smoking is not generally socially accepted in Saudi Arabia, some people will hide their smoking during an interview or in the presence of other family members. These authors used data extracted from a national survey between 1990 and 1993, indicating an overall prevalence of current smoking as 21.1% for males and 0.9% for females. The figures adopted here are those used by the official Report of the Tobacco Control Program (Al-Munif, 2009), which estimates the percentage of adult males who smoke as between 35% and 45%, and also the most recent figures from the Global Adult Tobacco Survey of the WHO (Table 1.1). This estimate is supported by corroborative evidence - the findings in the community study of Siddiqui et al (2001) and also the recent data published by the World Health Organization (WHO), showing that in Saudi Arabia 37% of adult males and 6% of adult females smoke (WHO, EMRO, 2010). Smoking prevalence in Saudi Arabia shows a similar pattern to neighbouring Arab states. Al-Kuwari (2008) states that prevalence of adult male smoking in the Arab countries

of the Persian Gulf ranges from 30-50%, citing the Gulf Family Health Survey in 1999. In Kuwait, the prevalence of smoking in adult males is reported as 34.4% (Memon et al, 2000).

Table 1.1: WHO estimated prevalence of smoking among those aged 15 years or more: Year 2011. All tobacco products. Saudi Arabia.

Adult prevalence (%)	Daily tobacco smoking
male	**35.0**
female	**5.7**
total	**22.0**

World Health Organisation: Report on the Global Tobacco Epidemic, 2013. [Online] Available: // http://www.who.int/tobacco/surveillance/policy/country_profile/sau.pdf [accessed 3rd February 2014].

The study by Siddiqi et al (2001) provides information on the methods of data collection and analysis used to calculate smoking prevalence in Saudi Arabia. The authors comment on the absence of any such statistics at that time and they carried out a survey of 634 male patients over 12 months attending the primary care clinics of the Department of Family and Community Medicine at Alkharj Military Hospital. Of these patients, 34.4% were current smokers (16.4% were ex-smokers and 49.2% were non-smokers). The study has serious limitations in terms of its setting, its size and the fact that it was restricted to male subjects. However, at least it is possible to see how this figure of smoking prevalence was determined.

The study carried out by Jarallah and colleagues (1999) used data collected from a large sample of 8310 individuals of both sexes aged 15 and over. Three regions were used – the west, east and southern regions of Saudi Arabia. The survey methods used and the analysis are described in their article, and the results showed a prevalence of 21.1% among males and 0.9% for females. Two points should be noted as limitations, however. As in the study by Siddiqi et al (2001), there is no definition of smoker status. Secondly, the study by Jarallah et al was carried out between 1990 and 1993, so the results are rather dated. However, both studies provide some evidence on smoking prevalence in the country before the implementation of the Tobacco Control Programme (TCP).

The trend of tobacco consumption rose in the period 2001-2010, except for the years 2007-2008 (AlBedah & Khalil, 2013). The figures for the amount of tobacco consumed in these

years was obtained from the Saudi Customs Authority through the Central Department of Statistics and Information. As Saudi Arabia imports all tobacco products, this source has one limitation, for which the authors make an adjustment in their calculations – smuggling. The study used the method published by Barnum: mortality was calculated on the basis of each ton of tobacco consumed: 0.65 deaths per ton. After adjustment for smuggling, average annual mortality per 1000 persons rose from 31 in 2001 to 41 in 2010. This study marks the first attempt to calculate mortality rates in Saudi Arabia attributable to smoking and they reveal a significant increase over this short period.

1.3. Patterns of smoking

In terms of patterns, Jha (2012) found that total deaths due to smoking have fallen sharply among men in many high-income countries but that, unless many smokers in low- and middle-income countries quit before or during middle-age, the global death toll will continue to rise. However, more than four in five of current smokers worldwide live in these low- and middle-income countries (Slama, 2008). This explains why the predictions of the WHO (1999) and Ross & Stoklosa (2012) suggest that an increasing proportion of deaths due to smoking will occur in developing countries.

According to World Bank figures (2012), Saudi Arabia is classified as a high-income country. However, as we have seen tobacco consumption is increasing. It will take some years before the figures for mortality and morbidity in Saudi Arabia will reflect this increase. For example, there is an approximate time lapse of 30 years between peak smoking and peak lung cancer rates (Jha, 2012). This phenomenon has been noted in other studies (for example, Lopez et al, 1994). There are, therefore, other factors than income alone which result in the trend in Saudi Arabia being different from that in other high-income countries.

The relationship between socioeconomic inequality and smoking was studied by Hosseinpoor et al (2012) based on World Health Survey data collected between 2002 and 2004. The authors note that there is an association between smoking and poverty. In terms of prevalence and consumption, poor people smoke more. While health inequalities exist within countries, the magnitude of inequality can vary greatly between countries. In cessation, quit rates are lower in the poorest groups and those living in socially deprived areas. This finding is supported in the UK by the research conducted by Bauld et al (2007). The study assessed the extent to which NHS stop smoking services had contributed to reducing inequalities in

smoking during the periods 2003/4 and 2005/6. Compared with national monitoring data, the proportion of smokers receiving help from the services was higher in disadvantaged areas and short-term cessation rates were lower in these areas. Support for these findings was confirmed by the later study by West et al (2013) – more than half those treated by NHS stop smoking services in 2010/11 were eligible for free prescriptions.

It cannot be assumed that there is a crude relationship between inequality in smoking and wealth status. Hosseinpoor et al (2012) argue that other factors, such as level of education, are key determinants of inequality in smoking. Certainly, however, the authors show that wealth remains a significant determinant of social risk in many countries. In the UK, for example, Pride and Soriano (2002) claim that there is a strong socioeconomic gradient in mortality and morbidity associated with smoking. However, there is no evidence to confirm or to reject the hypothesis that tobacco control measures in Saudi Arabia have any effect on inequalities in smoking or, even whether any such inequalities exist. It remains an open question, therefore, whether smoking cessation services in Saudi Arabia should target specific socioeconomic groups.

If the figures for overall prevalence of smoking in Saudi Arabia are compared with recent UK figures (Table 1.2), there is little difference in the proportions of the adult population who smoke. These figures, however, conceal a very different pattern of smoking according to gender (see Table 1.1). They are not directly comparable, since the figures for Saudi Arabia refer to current (rather than daily) smokers and the UK figures are for ages 16+ There are also differences in the collection and weighting of the data. However, I do not consider that these alone would be sufficient in explaining the very different patterns which are evident from the statistics. The superficial similarity of the data may also conceal differences in the stages of the tobacco epidemic through which the two countries are passing (Lopez et al, 1994).

Specific prevalence levels among specific sub-groups of the population (for example, gender, age, social class or profession and regional location) indicate the progressive and differential adoption of tobacco use and, according to Lopez et al (1994), are highly relevant statistics for the implementation of tobacco control programs.

Table 1.2. HSCIC estimated prevalence of smoking among those aged 16 years or more: Year 2009. All tobacco products. England.

Adult prevalence (%)	Current tobacco smoking
male	**22.0**
female	**20.0**
total	**21.0**

Health & Social Care Information Centre: Statistics on Smoking in England, 2013. [Online] Available: www.hscic.gov.uk/catalogue/PUB11454 [accessed 6th January 2014].

Using the Target Group Index, AlBedah et al (2011) have made a significant contribution to the study of smoking patterns in Saudi Arabia. The survey was conducted in 2008. In terms of socio-economic status, current smoking was found to be somewhat higher among middle-income groups:

Table 1.3. Current smokers' characteristics according to income

Monthly income (SR)	Current smokers	Percentage
0-3000 (n=918)	160	17.4
3001-6000 (n=2752)	568	20.6
6001-9000 (n=1391)	255	18.4
9001-15000 (n=774)	130	16.8
>15000 (n=165)	30	18.2

AlBedah et al (2011) Use of the target group index survey to evaluate the cigarette smoking profile in Saudi Arabia. Saudi Medical Journal, 2011, volume 32 (10): 1055-1059.

Table 1.4. Current smokers' characteristics according to age

Age (years)	Current smokers	Percentage
15-19 (n=761)	92	12.1
20-29 (n=2399)	436	18.2
30-39 (n=2212)	495	22.4
40-49 (n=1107)	251	22.7
>50 (n=524)	102	19.5

AlBedah et al (2011) Use of the target group index survey to evaluate the cigarette smoking profile in Saudi Arabia. Saudi Medical Journal, 2011, volume 32 (10): 1055-1059.

The study by Jarallah et al (1999) had also found that most smokers (78%) were aged 21-50, though this study was conducted between 1990 and 1993, using data from a national cross-sectional survey of chronic metabolic disorders. Firstly, there is a time difference of >10 years between that study and the study of AlBedah et al. This may in part account for the difference in the findings. Jarallah and colleagues found a smoking prevalence of 21.1% in Saudi males and 0.9% of Saudi females, compared with 36% and 3% in the study of AlBedah and colleagues. Secondly, Jarallah's study defined current smokers as those who had smoked one or more cigarettes per day for 6 months before the survey, excluding therefore many light smokers. Finally, their study included just three regions of Saudi Arabia and did not cover the central region, which includes Riyadh. The significance of this can be seen in Table 1.5:

Table 1.5. Current smokers according to region

Cities	Current smokers	Percentage
Jeddah (n=1118)	166	14.9
Riyadh (n=1609)	522	32.4
Eastern (n=1044)	88	8.4
Makkah (n=524)	88	16.8
Madinah (n=493)	155	31.4
Other (n=2215)	357	16.1

AlBedah et al (2011) Use of the target group index survey to evaluate the cigarette smoking profile in Saudi Arabia. Saudi Medical Journal, 2011, volume 32 (10): 1055-1059.

It can be seen that the proportion of current smokers was significantly higher in Riyadh and Madinah.

1.4. Smoking and morbidity

Increasing mortality rates are not the only concern in Saudi Arabia. Increasing tobacco use leads to an increase in disease and disability. Smoking may result in cancer, heart disease, stroke, lung diseases, which include emphysema, bronchitis and forms of COPD. Morbidity data are vital for the management of health care systems and for the planning and assessment of health care services. Such data is not available for Saudi Arabia (Alamoudi, 2006).

Evidence from the USA indicates that for every person who dies from a smoking-related disease, 20 more people suffer from at least one serious illness attributable to smoking (CDCP, 2003). Smokers, therefore, die earlier than non-smokers and they also occupy hospital beds. The study by Jha et al (2013) was based on data obtained by the US National Interview Health Survey 1997-2004. The analysis of this date carried out by the authors led to the calculation of the following survival rates: current smokers will live 12 years less (men) and 11 years (women) than non-smokers.

In Saudi Arabia, there is just one published study of hospital records relating to the prevalence of respiratory diseases in hospitalised patients. This at least provides some insight into the proportion of admissions related to major risk factors known to be associated with smoking. Alamoudi (2006) conducted a retrospective record review of all 810 patients admitted with respiratory disorders to the medical ward of the King Abdulaziz University Hospital, Jeddah between 1996 and 2000. This figure represented 14.5% of all admissions to the ward in that period. 55% of the patients were males and the mostly affected age group (41.8%) was 46-65 years. The percentages of prevalence among patients was (17.2%) for COPD and lung cancer (8.4%). The figures for males admitted with these diseases was significantly higher than for females. It is worth considering these figures, since my study was only able to focus on male patients. The rates for lung cancer, COPD and TB were 88.2, 66.9 and 74.1% for males, contrasted with 11.8, 33.1 and 25.9% for females.

1.5. The benefits of smoking cessation

The conclusion of the study by Taylor et al (2002) is that smoking cessation at any age can have a significant benefit in terms of longevity. Their research used the US Cancer Prevention Study II (>10 million life years of follow-up) to obtain relative risks of smoking. This enabled them to model in detail the effect on mortality of both smoking duration and of age at smoking cessation. The authors comment that their findings were similar to those of Doll et al (1994). A focus on life extension is a clear and understandable way of demonstrating to smokers the benefits of smoking cessation. Doll and colleagues found that those who had never smoked and were 35 years old had a life expectancy of 8 years more than men aged 35 who smoked until death. Taylor et al (2002) reported a comparative life extension of 8.9 – 10.5 years for men and 7.4 – 8.9 years for women.

Taylor and colleagues estimated that life extension gained from quitting at age 35 was 3.3 to 3.9 additional years for men and 2.2 to 2.6 years for women. Of course, smoking cessation also results in compression of morbidity and improvement in quality of life. An important study by Godtfredsen et al (2008) reviewed a total of 21 and 27 published articles respectively on COPD-related morbidity and all-cause mortality in COPD patients. Most of the studies reported a beneficial effect of quitting compared with continued smoking. From this review, the authors conclude that – even in severe cases of COPD – smoking cessation slows the accelerated rate of lung function decline and improves survival compared with continued smoking.

In the UK, the NHS has produced material to inform the public of the benefits of quitting, as well as the dangers of smoking. Some of the major dangers to health of continued smoking have been discussed in this chapter. In terms of the benefits of cessation, the NHS focuses not only on the more well-known effects of quitting. On their website (reviewed 2013), the NHS lists ten benefits to health of cessation. Possibly to attract popular attention, the first benefit mentioned is an improved sex life. Quitting smoking improves blood flow and so increases sensitivity. Improved fertility may also be a result of quitting, as the lining of the womb is improved and men's sperm may become more potent. More significantly, smoking cessation improves the chances of giving birth to a healthy baby. Stopping smoking slows facial ageing and delays the appearance of wrinkles. It also promotes dental health, reducing gum disease and non-smokers have whiter teeth and fresher breath. When people quit smoking their lung capacity increases by up to 10% in nine months; they breathe more easily and cough less. Nicotine addiction makes smokers stressed from the 'withdrawal' between cigarettes, so people's stress levels are lower after they quit. Senses of taste and smell recover after being 'dulled' by the inhalation of toxic chemicals. Within 2 to 12 weeks of quitting, circulation begins to improve, making all physical activity easier and more enjoyable. The immune system is strengthened as more oxygen is circulated through the body, resulting in higher energy levels and fewer colds or less flu. Family and friends are no longer subjected to the harmful effects of passive smoking. Passive smoking increases the risk of lung cancer, heart disease and strokes. Finally, the NHS stresses the benefits of cessation for longevity, as has already been discussed.

1.6. The methods of aiding cessation

In 1998 the Health Education Authority (HEA) published guidelines to be followed by health professionals for smoking cessation. West et al (2000) reviewed the evidence base and key recommendations of these guidelines, using updated Cochrane reviews and some individual studies. These authors concluded that these guidelines were effective in saving lives and reducing ill health and so they provide a model for all countries to adopt in implementing smoking cessation strategies.

One element of the guidelines is brief advice to quit from a health care professional delivered opportunistically to smokers during routine consultations using the 4 As (ask, advise, assist, arrange follow-up). There are then other key elements which will be discussed in more detail in the literature review. Face to face behavioural support to aid quit attempts includes focused counselling and advice by specialists trained for this purpose. The setting for this could, logically, be the smoking cessation clinic. Thirdly, nicotine replacement therapy (NRT) has been shown to be highly effective in reducing the urge to smoke and other withdrawal symptoms after quitting. Buproprion (Zyban) has been licensed for the treatment of tobacco dependence. Its effectiveness and side-effects will be reviewed in the literature.

In terms of a practical programme for treatment, the strategy thus involves:

- GPs advising smokers to stop during routine consultations, giving advice and/or prescribing medications to help them to quit and referral to specialist smoking cessation services.
- Specialist services to provide group or individual behavioural support for smokers who want help to quit and to provide appropriate medications.
- Specialist cessation counsellors to advise hospital patients and pregnant smokers who want help to quit.
- All health professionals involved in smoking cessation to provide assistance to smokers in the use of NRT and bupropion.

It should be noted that similar guidelines have been proposed in the US (Centers for Disease Control and Prevention, last reviewed 2014).

1.7. The role of smoking cessation clinics in treating tobacco dependence.

In their 1998 guidelines, the HEA recommended that smokers should have access to a specialist smokers' clinic. In areas with a high population density, the clinic may be centrally located, but in other areas a peripatetic cessation specialist could see clients in local health care centres or could provide training to primary health care staff. This recommendation is based on the proven effectiveness of specialist cessation practitioners (see West et al, 2000). Such specialist practitioners are required to develop either group or individual counselling treatment and they are also required to be knowledgeable about incorporating NRT or bupropion into a 'withdrawal orientated treatment model', advising on their appropriate use and the benefits smokers may expect to experience.

In the UK, the Department of Health offers guidance on how to develop effective stop smoking services (NICE, 2008). Smoking cessation services are responsible for implementing most of the key priorities (not all: workplace smoking cessation, for example, is the responsibility of employers). These guidelines indicate some of the vital roles which smoking cessation clinics, along with other services, must play.

The number and characteristics of the local population who smoke must be investigated and determined, and disadvantaged and ethnic minority groups should be specifically targeted. Performance targets should be set. Services should aim to treat at least 5% of the local population who are estimated to smoke, aiming for at least a success rate of 35% at 4 weeks of those treated. This figure should be based on all those who start treatment and who have not smoked in the third and fourth weeks after the quit date, verified by CO monitoring. There should be links with local contraceptive services, fertility clinics and ante- and post-natal services.

Smoking cessation clinics must be involved in behavioural counselling, group therapy, pharmacotherapy or a combination of proven effective treatments. These must be delivered by qualified practitioners. The effective treatments are those approved by the Programme Development Group. Specialist practitioners are necessary to provide and advise on the use of appropriate pharmacotherapies. Clinics may also have a role in providing specialist support for those hospital patients who have tried to quit during their stay, including a fast-track referral system after discharge of these patients from hospital. Educational roles may form an important part of the clinics' role, training healthcare staff to offer brief advice on

quitting and also specialist advice to those staff who work with specific groups, such as pregnant women who smoke, patients who are hospitalised or mental patients.

1.8. Smoking in Saudi Arabia: a historical perspective

In case it is assumed that smoking in the Middle East is a cause of acrimony only in modern times, when its dangers are widely known, Grehan reminds us that there have also been bitter disputes in the past, when Islamic beliefs and the social habit of smoking have come into conflict (Grehan, 2006). He describes in detail the fighting that occurred in 1699 in the streets of Cairo, when pilgrims en route to Makkah, inspired by religious zeal, attacked smokers. The author describes these as pipe smokers, and these probably used the *Midwakh* (Al-Houqani et al, 2012). The more tolerant consensus that later developed has not completely obscured these divisions of worldview as a more relaxed attitude to escapism and pleasure, reinforced by the 'early modern' attitudes in Western Europe, spread throughout the Ottoman Empire (Grehan, 2006).

First popularized in India and Iran, during the 17th century the Ottomans introduced the *shisha*, the earliest form of tobacco use in the Kingdom (Grehan, 2006). The *shisha* is an instrument for smoking tobacco in which the smoke is cooled and filtered by means of passing it through water. *Shisha* became popular in the Middle East soon after the arrival of tobacco. The great developments of the Turkish glass industry between the 16th and 18th centuries also resulted in the greater use of *shisha* because glass started to be used to make the body of this instrument (WHO, EMRO, 2006). Unlike western custom, where tobacco is smoked plain, *shisha* is mixed with fruit, molasses or even honey, giving it a sweet and flavoursome taste. By 1700 the Ottoman market was producing most of its own tobacco, including tobacco for pipes. Islamic jurists could not, of course, rely on scriptural sources to condemn the smoking habit; instead they tended to look back to the warnings of the prophet Mohammed on the drinking of wine, an intoxicant. (Grehan, 2006). Grehan details the various attempts at suppression of tobacco during the remaining centuries of the Ottoman Empire and the fact that its use came to be associated increasingly with Western (especially English) merchants who traded in tobacco throughout the region.

Cigarette smoking, specifically, has existed in Saudi Arabia for a little over 50 years (Jarallah et al, 1999), initially supplied through smuggling from neighbouring countries. However, the development of links among countries, especially in terms of trade partnership, paved the

way for foreign (principally US) companies to supply tobacco in Saudi Arabia. Figures for imports of tobacco products show an increase from 1000 tonnes in 1961 to 46,000 tonnes in 2006 (Al-Bedah & Qureshi, 2010 [i]). Saudis smoke 15 billion cigarettes annually, making the Kingdom the fourth highest importer of cigarettes in the world (WHO, 2001). It is not true, however, to claim that there is no public support for smoking cessation policies in the Middle East. The study in Egypt by El-Gewaily et al (1995) suggests that such support exists.

1.9. Saudi legislation and action on smoking

In order to address the problem of smoking, Saudi Arabia has undertaken various actions to reduce individual smoking consumption. Due to the grave problem of smoking in Saudi Arabia and the concerns raised, smoking was restricted or banned completely in many public places (Ghouri et al, 2006; Ghafour, 2008) even before the most recent current legislation came into force. International studies have shown evidence of the beneficial effects of smoking bans on public health (Meyers et al, 2009; Schroeder, 2009; Cronin et al, 2012). Some institutions, such as King Saud University, and companies have already established their own anti-smoking policies voluntarily (Al-Mobeireek, 2011; Rasooldeen, 2009 [ii]; 2010). The latest measures are reported in a press release by the Saudi Embassy in Washington, DC. The Interior Minister announced in July 2012 that a royal decree banning smoking in public places would be enforced with immediate effect. Under the official order smoking, including *shisha* (waterpipe smoking) is banned in all government facilities and most commercial areas, including restaurants, supermarkets, and shopping malls. The order also prohibits the sale of tobacco to those under 18 (Royal Embassy of Saudi Arabia, 2012 [i]; MOH, KSA, 2012 [i])

The Saudi Ministry of Health lists many of the laws concerning tobacco use that are currently operative. The selling of tobacco products to children and teenagers is banned (MOH, KSA, 2012 [ii]). There is a ban on all forms of tobacco marketing (MOH, KSA, 2009 [i]). Saudi Arabia has already implemented a Royal Decree to restrict the utilization of different types of media to advertise cigarette smoking. Television channels will not be able to present tobacco commercials, though promotion through the Internet and imported films and DVDs remains open to them (WHO, 2011[i]). Although media restriction is implemented, the country does not impose the same strict limitations on small businesses, which are able to display materials

such as posters, leaflets and other promotional items (Al-Munif, 2009). Regulations are in force specifying the size and prominence of health warning labels on cigarette packets (MOH, KSA, 2009 [ii]; WHO, 2011 [i]).

Concerns have, however, been expressed over issues of implementation of anti-smoking measures in Saudi Arabia (Al-Mobeireek, 2011; WHO, 2010 [ii]; WHO, 2011 [ii]). The Saudi government introduced in November 2010 a policy to enforce a ban on smoking in airports across the country (Al-Mobeireek, 2011). The Saudi government is passing new legislation aimed at eradicating the practice of smoking in airports. However, a new smoking lounge has been opened at King Fahd International Airport in Dammam as a facility for smokers (Airport Technology, 2012), extending the pattern for Saudi international airports.

The WHO has conducted a study into the effects of the declaration of the Holy Cities of Makkah and Madinah as 'smoke free cities' (WHO, 2011 [ii]). This is part of the campaign of the Ministry of Health to make Hajj tobacco-free (Rasooldeen, 2009 [i]). A distinctive feature of the approach adopted in Makkah and Madinah was its focus on targeting and restricting tobacco sales. This strategic approach complemented existing smoke-free legislation (the ban on smoking in hospitals, schools and government offices) and consensual norms (the smoke-free areas in and around the holy mosques). The exact ways in which the policies were implemented are outlined in the WHO study (2011 [ii]). Key actions extended beyond tobacco sales and include a ban on smoking around the Holy Mosques, prohibition of *shisha* smoking in many areas of the cities and the conduct of extensive awareness campaigns (WHO, 2011 [ii]). Since the initial royal directive in 2001, efforts to make the Holy Cities smoke-free have had a considerable impact, particularly in the restriction of tobacco sales (WHO, 2011 [ii]).

During Ramadan, the whole nation is obliged to stop smoking during the day time as a sign of respect for the country's religious beliefs. During the month, Muslims should not eat, drink (any liquid) or smoke from dawn to dusk (Aveyard et al, 2011; Ghouri et al, 2006). Qidwai's study (2004) in Karachi found that 91% of respondents gave up smoking during Ramadan. On regular days, however, some places in Saudi Arabia are very lenient with regard to smoking. According to municipal officials in Jeddah, increasing numbers of cafes and restaurants have larger areas for smokers compared to non-smokers. Hence, there has been a tolerant and even welcoming attitude towards smokers. This has been the case in many commercial establishments (Al-Fardan, 2010). Through this, smoking is undoubtedly

encouraged in society. Effective implementation of this legislation requires action such as that taken by the Ministry of Health in Bahrain of conducting raids in stores and cafes to enforce non-smoking regulations (Ministry of Health, Bahrain, 2009).

The measures announced by the Saudi Embassy in Washington are not the final step in anti-smoking legislation. In accordance with Saudi Arabia's responsibility as a signatory of the WHO FCTC, a 20-article Anti-Smoking Law was drafted, which will be reviewed by the Shoura Council (Royal Embassy of Saudi Arabia, 2012 [ii]). Some of the articles in this Anti-Smoking Law emphasize the proposed law in increasing the customs tariffs on tobacco and tobacco derivatives in yearly cumulative percentages, which will not exceed 300%. Tobacco companies will also be required to put larger warnings regarding the danger of smoking on cigarette packets (Al-Ghamdi, 2010).

As previously stated, the sale of tobacco products to individuals under the age of 18 is illegal and this is further reinforced in the 20-article Anti Smoking Law. In relation to this, the sale of cigarettes from vending machines and promotion through giving free or discount samples would be banned. The new proposed law has also expanded its scope because it will cover "cigarettes, cigars, tobacco, *shisha* (waterpipes) and any other products with tobacco ingredients" (Al-Ghamdi, 2010). Once the 20-article Anti-Smoking Law is reviewed and approved by the Shoura Council, it will be referred for royal approval (Al-Ghamdi, 2010).

Price and tax measures on tobacco head the list of core demand reduction provisions set out by the WHO (Table 1.3). The historical tendency for cigarette consumption has been for prices to rise as a result of tax increases (Sumner & Ward, 1981; Johnson, 1978). It has been clearly established that tobacco excise taxes are an effective tool for reducing tobacco use and for preventing potential users from taking up smoking (Chaloupka et al, 2012). Reduced consumption is comparative to price increase (Singh et al, 2012; Ross et al, 2011). Saudi Arabia, like other GCC countries, imposes a 100% import duty on tobacco, but the WHO recommends a transition strategy to reducing these duties over time while increasing specific tobacco excises (WHO, 2010 [i]). The effectiveness of import duties in generating higher revenues and increasing retail prices has been decreasing as countries adopt bilateral, regional and global trade agreements. The cost of cigarettes remains comparatively cheap.

Table 1.6. Simple average price of the most sold brand by WHO region, 2008

WHO region.	Average price/pack (US$)
African Region	1.55
Region of the Americas	2.40
South-East Asia Region	1.40
European Region	3.87
Eastern Mediterranean Region	1.20
Western Pacific Region	3.42

(WHO report on the global tobacco epidemic 2009: implementing smoke-free environments. Geneva, World Health Organization, 2009).

Although the figures for 2010, produced in the WHO Report (2011 [i]), show an increase in average cigarette prices in the Eastern Mediterranean Region, nevertheless these remained the lowest of all the WHO regions.

The most comprehensive picture of tobacco control measures is provided by WHO data. Considering smoke-free environments, two immediate weaknesses can be observed: the lack of dedicated funds for enforcement and the fact that fines are not levied on establishments which break the law:

Table 1.7. Saudi tobacco control measures at 31 December 2012: smoke-free environments.

Public places with smoke free legislation:	
Health care facilities	yes
Educational facilities except universities	yes
Universities	yes
Government facilities	yes
Indoor offices	no
Restaurants	yes
Cafes, pubs and bars	yes
Public transport	yes
All other public places	n/a

Compliance score (0-10; 0 is low compliance)	8
National law requires fines for smoking	yes
Fines levied on the establishment	no
Fines levied on the smoker	yes
Dedicated funds for enforcement	no
Citizens complaints and investigations	no

World Health Organisation (2013) Report on the Global Tobacco Epidemic, 2013. [Online] Available: // http://www.who.int/tobacco/surveillance/policy/country_profile/sau.pdf [accessed 3rd February 2014].

A further set of important data deals with the treatment of tobacco dependence.

Table 1.8. Treatment of tobacco dependence: Saudi Arabia

Nicotine replacement therapy e.g. patch, gum, lozenge, spray or inhaler	Is this product legally sold in the country?	yes
	Where and how can this product be legally purchased?	Pharmacy – no prescription
	Does the national/federal health insurance or the national health service cover the cost of this product?	Partially
	Is any NRT available on the country's essential drugs list?	yes
Bupropion (e.g. Zyban, Wellbutrin)	Is this product sold legally in the country?	yes
	Where and how can this product be legally purchased in the country?	Pharmacy with a prescription
	Does the national/federal health insurance or the national health service cover the cost of this product?	Partially
Varenicline	Is this product sold legally in the country?	yes

Is smoking cessation support available in the following places?	Health clinics or other primary care facilities?	yes in most
	Hospitals?	yes in most
	Office of a health professional?	no
	In the community?	yes in most
	Other	yes in some

World Health Organisation (2013) Report on the Global Tobacco Epidemic, 2013. [Online] Available: // http://www.who.int/tobacco/surveillance/policy/country_profile/sau.pdf [accessed 3rd February 2014].

The same WHO Report (2013) states in detail the current law in Saudi Arabia on health warnings on tobacco packaging. The law mandates 4 specific health warnings which must appear on packages. These health warnings must cover 50% of the display areas of the packaging. However, there are no fines established for violation of these regulations.

The situation with regard to mass media campaigns suggests that targeting and assessment opportunities were not taken into account.

Table 1.9. Anti-tobacco mass media campaigns in Saudi Arabia

Did the country have at least one mass media campaign in 2011-2012?		yes
Evidence-based planning	Campaign was part of a comprehensive tobacco control programme	no
	Campaign was pre-tested with the target audience	no
	Research about the target audience was conducted	no
Implementation	Campaign was aired on TV and/or radio	no
	Campaign used media planning to purchase or secure air-time and/or placement	no
	Earned media/public relations were used to promote the campaign	yes
Evaluation	Process evaluation was used to assess implementation	no
	Outcome evaluation was used to assess effectiveness	no

World Health Organisation (2013) Report on the Global Tobacco Epidemic, 2013. [Online] Available: // http://www.who.int/tobacco/surveillance/policy/country_profile/sau.pdf [accessed 3rd February 2014].

1.10. Saudi health service provision

Since its establishment in 1951, the Saudi Arabian Ministry of Health has been providing comprehensive and integrated public health care services to each citizen of the country (Al-Yousuf et al, 2002), financed from government revenues. The provision of such services nationwide was confirmed by Royal Decree in 2002, recognising the fact that a national system of health provision was in place (WHO, EMRO, RHSO, undated). From 1970 to 1980, most of these services were curative, and only after 1980 did the concept of primary health care become popular (Al-Yousuf et al, 2002). Since that time, social and economic development has resulted in greater life expectancy, reduced morbidity patterns and decreased mortality rates (Al-Yousuf et al, 2002). There has also been an increase in what may be termed 'lifestyle diseases' and injuries, from psychological stress-related diseases to road traffic accidents (Al-Mazrou et al, 1995). The system ensures that all services are equitable, affordable and well organized (Ziegler, 2010). A Health Systems Outline has been published by the EMRO of the WHO to describe how these services operate (undated). The WHO estimated in 1997 that Saudi Arabia ranked 26th out of 191 countries worldwide and 2nd among Arab states (WHO, 2000) for the quality of health services provided.

In the Kingdom of Saudi Arabia, the Ministry of Health is responsible for the supervision of healthcare in the public and private sectors. The organisation of the Ministry is divided into two tiers. The first deals with hospitals and specialised treatment facilities in the major urban areas. The second deals with a network of primary healthcare centres and clinics (PHCCs). There are a total of 1,925 centres in Saudi Arabia that provide preventive, prenatal, emergency and basic services (Saudi Statistics Office, 2009). These PHCCs are the flagship of the government's health program, each serving the community in its catchment area. A defined group of PHCCs serve as the catchments for a hospital. The services that they provide are curative, preventive, rehabilitative and promotional (Al-Yousuf et al, 2002). There is no published evidence on whether these PHCCs were in any way a model for the later smoking cessation clinics set up under the TCP.

The Ministry of Health operates 62% of the hospitals and 53% of the clinics and health care centres – the remaining facilities are operated by government agencies including the Ministry of Defence, the Ministry of the Interior, the National Guard and several other ministries. (Ziegler, 2010). There is also a private (for profit) sector. This sector includes hospitals,

clinics, dispensaries and pharmacies and employs 28% of the nation's doctors and 19% of the nurses and provides 19% of all hospital beds (Al-Yousuf et al, 2002). To these must be added the health care facilities provided by charitable organisations. These include clinics operated by the Saudi Smoking Control Charitable Society. During the 1980s and 1990s, 33 anti-smoking clinics were established by this Society to provide treatment services (pharmacological and non-pharmacological) for smokers. Their success rate for smoking cessation was reported as 13% (Saudi Smoking Control Charitable Society, 1996), though this claim lacks a strict definition of 'cessation' or an indication of whether this was 'self-reported' or confirmed by monitoring.

The stated mission of the Ministry of Health is to provide primary healthcare to all Saudi Arabian citizens. It ranks highly in the region in terms of the health worker: population ratio of 17.1 physicians per 10,000 population, compared with the WHO EMRO average of 9.4 physicians per 10,000 population (Al-Yousuf et al, 2002). It is the most important body through which the promotion of smoking cessation is conducted now that a network of clinics has been established throughout Saudi Arabia.

1.11. The development of services

Leading clinicians in Saudi Arabia were already arguing for some form of national guidelines (Al-Doghether, 2001; Siddiqui & Ogbeide, 2001) before the TCP was established. In 2002 the Ministry of Health in Saudi Arabia set up the Tobacco Control Program of the WHO. Its goals and activities followed guidelines recommended by the WHO, and among the Six Policies of the TCP is included the establishment of clinics throughout the country specialising in the treatment of patients (clients) wishing to quit smoking. The clinics also play a role in promoting the anti-smoking message through work in the community (Al-Munif, 2009). Many other countries, signatories to the FCTC, have established smoking cessation clinics. Among Saudi Arabia's neighbours, for example, Kuwait has done so (Alzanki et al, 2005), and Qatar has established two specialist clinics free to clients, who number over 700 annually. These, however, are hospital-based rather than primary care or community-based centres (Al-Kuwari, 2008). Saudi Arabia has set up 36 anti-smoking clinics, 7 of which are in the Riyadh area (Al-Munif, 2009).

Intervention has two aspects: prevention and cure. (Ranney et al, 2006). These are referred to in the first two goals of the TCP namely, to protect society from the smoking epidemic,

especially the youth and, secondly, to help smokers to quit. International efforts have been directed at legislation and education to raise awareness of the dangers of smoking and at the provision of treatment facilities to help those smokers who wish to quit (Rice & Stead, 2004). Specialist smoking cessation services were first set up in the UK in Health Action Zones in 1999/2000 (Moore et al, 2003). One of the earliest initiatives in the Middle East region was an agreement reached in 1979, when the Saudi representatives presented a paper at the Health Ministers Council of the Gulf Cooperation Council (GCC) states, proposing joint actions on measures to ban smoking in schools, colleges and hospitals, bans on tobacco advertising and initiation of educational awareness programs (Minister of Health, Qatar, 2004). Its members – Saudi Arabia, Kuwait, the UAE, Oman, Qatar and Bahrain - continue to coordinate their efforts to promote smoking cessation at GCC Health Ministers meetings (WHO, EMRO, 2012).

From 2001, the Gulf countries established collaboration with the WHO Eastern Mediterranean Regional Office and in 2005 Saudi Arabia became the 65th country to ratify the WHO Framework Convention for Tobacco Control (FCTC) (Al-Munif, 2009). The FCTC is the first treaty ever negotiated under the auspices of the WHO and it was developed in response to the globalisation of the tobacco epidemic (WHO, 2003). It is the only UN treaty on health (Raw, 2011). While the FCTC is an international framework, its success depends on health professionals taking responsibility in their own day-to-day work (Ockene, 1987 [i]; Coleman, 2004). This includes health professionals practising in many different fields. For example, dentists should warn all patients (Alrsheedi & Haleem, 2012). Most dental care practitioners in Saudi Arabia do not do so (Subaie et al, 2011). Smoking causes excess plaque, yellowing teeth, contributes to tooth decay and it increases the risk of oral cancer five-fold (Winn, 2001). Cancer of the mouth and pharynx ranks sixth overall in the incidence of various cancer types in the world (Johnson, 2001).

There are to date now 172 signatories, representing 90% of the 192 UN member states and 87% of the world's population (Framework Convention Alliance, 2011). The core demand reduction provisions are contained in articles 6-14 of the Convention and the core supply reduction provisions in articles 15-17 (see Table 1.2). The provisions were instrumental in influencing the policies of the Tobacco Control Program in Saudi Arabia. Although the TCP was set up in 2002 and Saudi Arabia did not ratify the FCTC until three years later, internationally the FCTC opened for signature in Geneva in 2003 following several years of

drafting. International policies were clearly determined at the time that the TCP came into existence. Activity 5 listed in the Report on the TCP refers specifically to these: *Follow up the implementation of the Framework Convention for Tobacco Control* (Al-Munif, 2009).

Table 1.10. Provisions of the WHO Framework Convention on Tobacco Control

Core demand reduction provisions
• Price and tax measures to reduce the demand for tobacco • Non-price measures to reduce the demand for tobacco, namely: ▪ Protection from exposure to tobacco smoke ▪ Regulation of the contents of tobacco products ▪ Regulation of tobacco product disclosures ▪ Packaging and labelling of tobacco products ▪ Education, communication, training and public awareness ▪ Reduction of tobacco advertising, promotion and sponsorship ▪ Demand reduction measures concerning tobacco dependence and cessation
Core supply reduction provisions
• Stop illicit trade in tobacco products • Prohibit sales to and by minors • Provide support for economically viable alternatives to tobacco production

(WHO, 2003).

The Ministry of Health in Saudi Arabia has a number of programs, each with a Director responsible to the Minister of Health (KSA, MOH, 2012). Within the organisational structure of one of these programs, the TCP, there is a Department of Clinics' Affairs which is responsible for overseeing the provision of treatment services to help smokers to quit through the specialised clinics which have been established. The Department of Awareness and Health Campaigns is responsible for the planning and implementation of activities and campaigns to raise awareness of the dangers of smoking and how to quit. The organisation of

exhibitions, seminars and conferences and liaison with other bodies involved in efforts to tackle the increase in tobacco use is the responsibility of the Department of Public Relations and Exhibitions. Research into tobacco use and its health and social consequences in Saudi Arabia is overseen by the Department of Studies and Regulations, which also has specific responsibility for ensuring that the provisions of the FCTC are implemented throughout the country. The Department of Training and Development identifies the training needs of both new and existing staff working in the field of tobacco control and organises training programs to keep pace with new international research in this field (Al-Munif, 2009). Although the clinics are responsible for their day-to-day operation, these departments have responsibility for improving those services which fall under their remit.

1.12. The international context of tobacco control

The need for the coordination of smoking cessation policies into a national program had been recognised some years before the TCP was established (Jarallah, 1996; Jarallah et al, 1999; Siddiqui et al, 2001; Al-Doghether, 2001). Prior to the establishment of the TCP in Saudi Arabia, Al-Doghether noted that *'there is no national consensus on what should be done and how it is to be done'* (2001:3). In their study into smoking prevalence and determinants in Saudi Arabia, Jarallah et al (1999) had called for the foundation of a large-scale intervention program for tobacco control in the Kingdom. They referred to guidelines established by the World Health Organisation (WHO) for comprehensive national tobacco control programs (WHO, 1979; 1983). These guidelines later became formalised into an international framework, opened for signature by national governments in June 2003 in Geneva (Roemer et al, 2005; WHO, FCTC, 2003). Saudi Arabia became a signatory in 2005.

The World Health Organisation Framework Convention on Tobacco Control (WHO FCTC) is, as the title denotes, a framework. It does not stipulate the ways in which the national governments who sign the Convention are to implement its provisions. The WHO has established no monitoring authority to which FCTC violations can be reported (Braillon & Dubois, 2012). While the enactment of legislative measures and the undertaking of awareness campaigns are agreed on by the signatories, the details of how these are to be implemented are not stipulated under the Convention (Raw, 2011). Similarly, in the establishment of specialist smoking cessation clinics, the manner in which they operate and the forms of treatment provided by them are determined by the national governments

concerned. The Convention does, however, assert the importance of demand reduction strategies as well as supply issues (WHO, FCTC, 2003). The FCTC places the onus on national governments to determine which socio-economic groups to target in awareness campaigns, in what form the anti-smoking message is to be delivered and what forms of treatment to deliver. The FCTC only recommends that these decisions should be 'evidence-based' (WHO, FCTC, 2003; Raw, 2011).

1.13. The research problem and aims and objectives of the study

The extent to which treatment, research and management programs may be effectively implemented in widely-differing socio-cultural contexts has not yet been comprehensively studied (Raw, 2011), despite the fact that the WHO Framework Convention on Tobacco Control has now been internationally adopted by many signatories (WHO, 2012). This study aims to make a contribution to this gap in knowledge by investigating the perceptions of service-users and service-providers in the smoking cessation clinics in Riyadh, the capital of Saudi Arabia, which were established as part of the Tobacco Control Program set up in the Kingdom in 2002.

The initial idea for the research was derived from three principal considerations. Firstly, the Tobacco Control Program (TCP) is a relatively recent initiative. The TCP was established in 2002 by the Ministry of Health in Saudi Arabia. The Report of the TCP (Al-Munif, 2009) marked the first comprehensive appraisal of the functioning of the Program since its inception. Following the publication of this official report, I considered that it would be useful to investigate the perceptions of key stakeholders on how effectively it was operating, after an initial period in which to establish its practices and procedures. Secondly, there had also been evidence provided in a number of publications of the growing prevalence of tobacco use in the Kingdom of Saudi Arabia, resulting in major public health problems (Jarallah et al, 1999; Siddiqui et al, 2001; WHO, 2002; Al-Munif, 2009). Finally, my professional background in the area of health care provided opportunities to observe the medical and social effects of tobacco use and to be aware of the serious nature of these problems in my own city, Riyadh. The research idea, then, derived from a practical issue and the desire to investigate scope for improvements in the implementation of smoking cessation policies.

I hoped, then, that the perceptions of service-users and service providers in the smoking cessation clinics might suggest an answer to the research problem: smoking prevalence has declined in western, developed societies, but not in Saudi Arabia (Al-Bedah & Qureshi, 2012; Siddiqui & Ogbeide, 2001; Al-Lehiany & Stanley, 2009). Among the factors at work, failures in the strategy and implementation of the TCP might account, at least in part, for the continued prevalence of smoking in the Kingdom. Alternatively, the answer to the problem might have to be sought in broader aspects of Saudi society and culture.

On the basis of the definition of the research problem, provisional aims and objectives were defined. These were later defined firmly as they are stated in Chapter 3. Provisionally, the aim of the dissertation was determined as: to produce an original piece of investigative research into smoking cessation services provided by the TCP in the Riyadh region. Although this aim was not later modified, the literature review provided a necessary overview. The first objective of the research - to investigate the extent of the health care (smoking cessation) services provided under the TCP for smokers in the Riyadh region - provides a factual basis on which the other objectives could be pursued. In addition to the TCP Report itself, the literature on smoking in Saudi Arabia is able to provide information on the extent of these services. This objective relates to the treatment aspect of the work of the smoking cessation clinics, as dealt with in Chapter 2.

The second objective refers to the awareness-raising aspect of their operation: to investigate the perceptions of male clients and health care services professionals in the smoking cessation clinics in Riyadh on the effectiveness of the clinics in raising awareness of the dangers of smoking, in order to encourage smokers to quit. The literature review considers aspects of smoking behaviour in terms of motivation to quit, relapse and dependence. Some relevant literature relating to the social and cultural context of tobacco use, particularly in regional and national studies, was included in the review, since no plan to raise awareness of its dangers can totally ignore these contexts, such as the popularity of waterpipe smoking in the Middle East. However, the objectives of the thesis do not extend to a socio-cultural analysis of tobacco use in Saudi Arabia. The references are intended only to give some understanding of the context within which the TCP is attempting to control tobacco use. They have some role in evaluative research, as one of the properties described by Guba and Lincoln (1989) and outlined in Chapter 3.

The third objective is: to identify the strengths and limitations of health care (smoking cessation) services provided for smokers in the Riyadh region. Following the literature review, this clarification was added in justification of the research: specifically as a platform for developing those strengths in the future, and this is discussed in the concluding chapter.

Chapter 2

Literature Review

Initially in this chapter, the search procedures for the literature and the critical assessment approach adopted in the review are described. The chapter then reviews the literature on tobacco control policies internationally to determine whether the Saudi program is in line with that of other countries in the policies which it has adopted. I include reviews of the literature on tobacco control in the specific Saudi context to link the Saudi experience to Arab socio-cultural and to international contexts. The final section considers literature relating to the suggestions for developing the role of the clinics and implementing the Six Policies contained in the TCP listed in its Report (Al-Munif, 2009).

A number of reasons have been advanced for conducting a literature review (Gall et al, 1996; Hart, 1998; Cooper, 1988; Randolph, 2009). Selecting the most relevant of these reasons, I regard the following as the most useful for the purposes of this review: establishing the context of the research problem; relating ideas and theories to applications; acquisition of the subject vocabulary; identifying the main methodologies and research techniques that have been used and identifying recommendations for further research.

In terms of establishing the context of the research problem, a review of literature on smoking prevalence internationally and on cessation trends might throw light on such trends in Saudi Arabia. This would help to establish the context of the research question and to rationalise the significance of the problem. It would serve also to distinguish what had been done from what still needs to be done, informing the comments on future recommendations. It would inform the debate on the 'religiously-inspired approach' to tobacco control favoured by the WHO Eastern Mediterranean Regional Office. Not least, an important part of the literature review would lie in the acquisition and understanding of the research vocabulary. This would be particularly important in the discussion of health behaviour theories as these relate to 'motivation', 'dependence', 'relapse' and 'self-efficacy'. Finally, a review of the literature on methodology in the field indicated how to establish the validity and reliability of the results obtained.

Cooper's taxonomy (1988) was valuable for suggesting what should be the focus of the literature review. The first focus, research outcomes, is investigated in this chapter, summarising the substance of the literature and drawing conclusions from it (Educational Resources Information Center, 1982). As a simple example, the research of Maziak (2002) into the social context of waterpipe smoking in Syria is considered in relation to its implications for smoking cessation in another Arab culture, Saudi Arabia. The second focus,

research methods, is applied in this chapter to investigate methods of analysis in the field of health studies. The decision on the type of study to conduct and on testing for validity and reliability is based on the consideration of previous research in terms of practicalities, research aims and ethics. Thirdly, some aspects of the context of tobacco control in the Kingdom are discussed and I review the literature to investigate how research into motivation and dependence might serve to inform tobacco control practices and policies in Saudi Arabia. Cooper's taxonomy (1988) was valuable for suggesting what should be the focus of the literature review. Finally, the fourth focus considers the application of tobacco control internationally and reviews such control in the context of Arab culture, specifically in the Saudi context.

The approach was, firstly, integrative – attempting to generalise findings across a number of studies (Cooper, 1988). It was also critical – not all health behaviour theories, for example, might be equally applicable to the field of tobacco use, where questions of addiction and dependency affect issues of treatment and relapse. The goals of the literature review were to identify findings across treatments and contexts – international and national, to discuss the central issues of a religious-based policy on tobacco control, and to include relevant references to social context in terms of tobacco control in the Kingdom, and its relationship both to education campaigns and to treatment in the smoking cessation clinics in Riyadh. Finally, there remained the question of how wide to cast the net. Given the many aspects of the Tobacco Control Program, an exhaustive review of the literature in all these fields was not an option. As far as possible, the criterion of the purposive approach was used – the key articles in the field were located and reviewed (Cooper, 1988). However, in addition to this, an exhaustive review based on selected inclusion/exclusion criteria was also employed (Randolph, 2009). The basis for inclusion consisted in decision-making on the relevance of an article to meeting the aim and objectives of the study (Weightman & Williamson, 2005; McNally & Alborz, 2004). As a check on whether the literature review had been conducted effectively, the categories proposed by Boote and Beile (2005) for evaluating the review were applied: coverage, synthesis, methodology, significance and rhetoric.

2.1. The literature search strategy

This section describes the search process to locate literature relevant to the aim and provisional objectives of the study. A number of sources were consulted on conducting a literature search including Hart (2001) and Timmins & McCabe (2005). Key words and terms were identified for initiating the search. This was then followed by specific reference to these terms combined with the geographical terms 'Saudi Arabia' and 'Arabic countries'. Next, key words and terms were drawn from the objectives of the study. These terms were: 'tobacco control', 'smoking cessation + motivation' (objective 1); 'smoking cessation program' in objective 2 had already been identified from the title; from objective 3 the synonymous terms 'smoking cessation clinics' and 'anti-smoking clinics' were taken as representing a major part of the services provided by the TCP.

Having identified these key terms, the search was initiated through the library catalogue online databases at the University of Huddersfield. The help of experienced library staff in the general subject area of health was valuable in locating the range of potentially relevant literature available either in the library itself or available through inter-library loan. Online sources were also researched through Medline [PubMed] using the keyword terms cited above. The 'Related Articles' feature was used to review the reference lists of relevant papers. All articles cited on Medline were known to have been selected for the scientific merit of their content and quality of editorial work (MEDLINE Journal Selection Fact Sheet, undated). Using PubMed, it was possible to perform a Global Entrez search to find the number of hits in each database. The Cochrane Database of Systematic Reviews and the specialised register of the Cochrane Tobacco Addiction Review Group were consulted. This database provided a list relating to each article consulted, and this gave a useful and comprehensive listing of citations of the article in question by other articles.

Multiple database searches were conducted to identify recent publications. Search terms were limited to publications dated between 2000 and 2013. All identified documents were researched and relevant documents were retrieved for consideration and possible inclusion in the review. Reference lists of those documents retrieved were hand-searched to identify additional publications. I also searched the Cochrane Library and PubMed using a total of 30 subject headings: the list below is not a comprehensive list and aims only to indicate the methodology used. It does not, therefore, record specific combinations of terms and the

results of each of these combinations from each of the databases. Boolean operators were also used to link some search terms – examples are given in sections 3,4 and 5 in Table 2.1.

Table 2.1. Database search procedures

Date of final comprehensive search 31/12/2013.

	Subject Heading Searches (selected examples)	**References**	**References**
		Cochrane	Pub Med
1	Tobacco control	112	19939
	Tobacco control programs	52	1494
	Tobacco control programs EMRO	0	2
2	Smoking cessation	5143	21251
	Smoking cessation programs	884	2022
	Smoking cessation quit rates	730	1549
	Smoking cessation clinics	271	523
3	Anti-smoking clinics	13	26
	Anti-smoking clinics and quit rates	2	3
4	Smoking cessation and awareness campaigns	4	59
5	Motivation to quit smoking	327	1485
	Motivation to quit smoking and dependence	63	315

Key publications were subject to individual searches. Among these were the Saudi Medical Journal, the Annals of Saudi Medicine, the Middle East Journal of Family Medicine, the British Medical Journal, Tobacco Control and the American Journal of Public Health. Their index entries and archive references indicated those articles which were of potential relevance. These journals also provided links to other related journals such as the Journal of Smoking Cessation, Thorax (an International Journal of Respiratory Medicine) and Addiction. An article in the Saudi Medical Journal provided a comprehensive list of online sources of health statistics and journal articles in Saudi Arabia (Al-Zalabani, 2011). Many Saudi medical journals are not indexed in online databases, but the project Saudi Medical Literature, operated by the Health Sciences Library of the North West Armed Forces Hospital in Tabouk, Saudi Arabia, is attempting to compile such an index (Al-Zalabani, 2011). National and regional journals were useful in guiding research on religious and social aspects of Saudi life which impact on smoking behaviour.

In addition to the search through databases for academic health literature, and the search through journals related to the field of my research, I followed a systematic procedure of citation tracking, subjecting each new reference obtained to this procedure.

An evidence hierarchy was applied in the consideration given to the reliability of the literature reviewed (Evans, 2003). Meta-analyses were the most reliable of the sources of information. As an observational study, such an analysis may provide an explanation for the heterogeneity between the results of individual studies. The meta-analyses included in the literature review were researched to try to ensure that certain eligibility criteria were met: the quality of the trials included and the combinability of treatments, patient samples, outcomes and follow-up provisions (Egger et al, 1997). I consulted, for example, the research of Etter & Stapleton (2006) into studies of the effect of a single treatment episode with NRT, to assess if this increased smoking cessation over many years. This was a meta-analysis of all randomised controlled trials of NRT with final follow-up greater than one year after treatment commenced. A total of 12 trials, comprising 2408 active and 2384 placebo treatment participants, were identified, having final follow-ups ranging from 2-8 years. All had earlier follow-ups at 12 months. This was an important study, because it was able to show that results after only 6-12 months of follow-up overestimate the lifetime benefit by about 30%, suggesting the need for repeated episodes of treatment.

The inclusion of Cochrane systematic reviews meant that some meta-analyses were included in the literature review. Some, although not all, of the reviews contained a meta-analysis. An average result would possibly be misleading if the designs of the studies reviewed were too different, if the outcomes measured varied widely or if there were doubts about the quality of some studies in the review. The Cochrane reviews have the advantage for the researcher that they incorporate the results of trials which meet certain stringent quality criteria specified in the protocols (Cochrane Handbook, updated 2011). They are also updated to include recent research.

As an example of the critical approach adopted in this study towards systematic reviews, I consulted the study by Riemsma et al (2003) on stage based interventions and their effectiveness in influencing smoking behaviour. Study selection was based on randomised controlled trials comparing stage based interventions with usual care or non-stage based interventions in influencing the behaviour of smokers. The quality of studies was based on randomisation, allocation concealment, blinding, baseline compatibility, adjustment for baseline differences and follow-up. A total of 23 studies met the selection criteria, with 8 trials showing an increase in smoking cessation with a stage-based intervention and 12 trials

showing no difference. The other 3 trials were inconclusive because multiple outcomes were used for smoking behaviour. I found problems with validity of assessment of stage change, and less than half of the studies included in the review evaluated stage change. There appeared to be a lack of weighting based on the quality of each study included in the review, and the summary was descriptive rather than quantitative. I therefore excluded this study from my review of the literature.

In contrast, I included the systematic review of randomised controlled trials by Moore et al (2009) to determine the effectiveness and safety of NRT-assisted reduction to stop smoking. A total of 7 randomised controlled trials were included in the review. The criteria for the inclusion of these trials is set out in detail in the methods reported in the article. The total number of articles identified through electronic searches was 6152. The flow of papers through the study is detailed, down to the 7 studies finally eligible for inclusion. These studies enrolled smokers who had declared no intention to quit and compared NRT with placebo, no treatment, other pharmacological therapy or motivational support and compared quit rates. Eligibility criteria for including these trials were assessed by two independent reviewers, who looked at study quality and data extraction methods, using a data extraction form. Study quality assessment was based on guidelines laid down by the NHS Centre for Reviews and Dissemination.

Randomised controlled trials (RCTs) were considered next in the evidence hierarchy. In order to determine that a cause and effect relationship does, in fact, exist between treatment and outcome, they have an advantage over non-RCTs. Random allocation to intervention groups ensures that no systematic differences between intervention groups in factors that are known or unknown may affect the outcome (Sibbald & Roland, 1998). Literature using RCTs was analysed to discover if a double blind study had been applied, so that the assessment of outcomes would not be biased by the preconceived views of either subjects or researchers. For example, the RCT of Simon et al (2004) was consulted. A total of 244 current smokers took part in an outpatient randomised blinded smoking cessation trial, during treatment with bupropion vs placebo. Almost equal numbers received each form of treatment. Participant recruitment and follow-up were recorded in detail. There was follow-up based on self-reporting to researchers over the telephone at 3, 6 and 12 month intervals. Critically, however, to the reliability of the findings, for those who reported quitting at the 12-month stage, saliva samples were collected for cotinine testing.

There remained the problematical sources of grey literature. Sources of health statistics consulted included those of the World Health Organisation (WHO, 1979, 1995, 2000, 2011 [i]). Most relevant were the statistics compiled by the Index Medicus for the Eastern Mediterranean Region (IMEMR), set up in 1987 by the WHO Regional Office for the Eastern Mediterranean (EMRO) to index health and biomedical journals published in the region. The EMRO not only indexes the journals but compiles regional statistics based on data drawn from them. The Report of the Tobacco Control Program itself cites a number of smoking-related statistics. These are not always fully referenced and must be treated with caution.

Grey literature is a source of data that suffers from several limitations, and critics have questioned the validity of its data (Conn et al, 2003). For example, it is rarely peer-reviewed. The frequent references in this thesis to the Report of the Tobacco Control Program are the most notable examples that recourse to this type of literature was at times necessary. Indeed, as Alberani et al (1990) have noted, it is often difficult to define how grey literature is distinct from official publications. These authors suggest that grey literature be defined as semi-published. WHO published data included in this research was necessary in the absence of any other statistical sources, and corroborative evidence was usually lacking. The WHO data is frequently based on figures provided by a participating country of the FCTC, and the national sources for this data are undisclosed. Comparison of data across countries is also prejudiced by this limitation.

Qualitative studies were included in the review where there was a clear research objective and design, sampling and procedures, full analysis and discussion of the results and verifiable referencing. The basic strategy to ensure rigour in qualitative (as in quantitative) research is systematic research design, data collection, interpretation and communication (Mays & Pope, 2000). An account of methods and data collection must stand independently, so that another researcher could analyse the same data using the same methods and come to a broadly similar conclusion. Assumptions made in the study should be clearly stated (Mays & Pope, 1995). A case in point is the (undated) study by West and colleagues reviewed in Chapter 2.10. This large-scale qualitative study contains all these necessary inclusion criteria.

Each of the following sections of this chapter contains a reference to the Report of the TCP. In any assessment of the Program, two questions had to be asked: are its policies in line with

international experience and practice in smoking cessation initiatives and, secondly, how effectively is it seen to be implementing those policies? This first question seems pertinent to the aim of this study in order to determine whether the policies being pursued are the same as those that have been arrived at through international consensus. Through the questionnaire, it could then be determined whether clients and professionals in the Riyadh clinics were aware of the actions taken to implement the TCP policies, and how well they considered they were being implemented. The starting point in the literature review, then, was to discover what were the elements of international tobacco control policies.

2.2. The Saudi Tobacco Control Program

In considering the operation of the TCP in Saudi Arabia, the effectiveness of implementing similar strategies in other countries gives useful insights into governmental smoking cessation efforts internationally. The responses of participants in the questionnaires and interviews can then be considered in the wider context of international and regional experiences. Behind these experiences can be seen the framework of policies recommended by the WHO FCTC, already referred to earlier in this chapter, and adopted by many countries which are WHO members. It is particularly useful to review regional experiences, particularly where there are shared elements of culture with Saudi Arabia, notably religion.

One meta-analysis looked at the effectiveness of smoking cessation programs in diverse social and cultural contexts (Baillie et al, 1994). It analysed randomised controlled trials on the efficacy of smoking cessation interventions, comparing 146 estimates of the difference in abstinence rates between treated and control conditions from 85 publications. In the promotion of abstinence, brief intervention techniques and simple advice to quit, NRT treatment and behavioural techniques were all found to have some effectiveness, although the results were not homogeneous. A study by Gadomski et al (2011) found that an in-patient program in the US was effective in promoting smoking cessation. This finding was based on a telephone survey of in-patients 6-months post-discharge. Outcomes for patients who had seen the in-patient smoking cessation counsellor were compared to patients who had not been seen. This study was limited by its reliance on self-reported abstinence rather than objective testing. The same result had been obtained for an in-patient program (cardiovascular disease patients) in Canada (Chouinard & Robichaud-Ekstrand, 2005). The in-patient intervention was a 1-hour counselling session, followed by 6 follow-up calls in the 2 months after discharge. The same limitations of self-reported abstinence applied to this study.

Chun et al (2012) reported on the benefits of a smoking cessation program among male secondary school students in South Korea. In this Korean study, self-reported scales for smoking behaviour were analysed along with urinary cotinine and CO levels before and after the study. It was, however, limited by size and gender (80 male middle-school students participated). Belleudi et al (2007) found an improvement in the treatment of smokers among Italian NHS patients when a smoking cessation program was available.

Balbach et al (2006) refer to the need for multi-level, multi-sectoral interventions to promote smoking cessation. Based on an analysis and coding of the trial testimony of 14 high-level executives of the tobacco industry, the article argues for the need to combat rational choice theories which emphasise the autonomous rights of individuals to decide on their own smoking behaviour changes. This idea of multi-sectoral interventionism characterises the approach to smoking cessation (and the necessary role of government) both of the WHO FCTC and of the TCP in Saudi Arabia. The plans of action are based on the idea that when several agreed policies are implemented jointly, then the objectives will be attained more successfully.

The TCP, which is used here in the Saudi context synonymously with the term smoking cessation program, has six major policies. In terms of treatment delivered by the smoking cessation clinics established under the TCP and in terms of their role in raising community awareness of the dangers of tobacco use, the professional staff and clients in the clinics have first-hand knowledge. Their views on Policy 3 of the TCP, which deals specifically with the operation of the clinics, are based on their personal experiences.

Since 1970 the World Health Organisation (WHO) has urged countries to adopt policies to reduce tobacco consumption. These efforts have taken the form of technical reports or action plans emanating either from Geneva or from various Regional Offices. Laforge et al (1998) refer to these in their article on the development of a standardised survey questionnaire at the University of Rhode Island. This survey, the Smoking Policy Inventory, aimed to measure the support for tobacco control policies across different populations and it was initially applied in six different countries. The authors summarised the policy initiatives advocated by the WHO (WHO: 1979; 1983; 1987; 1995) as reported in Table 2.2:

Table 2.2. Policy initiatives advocated by the WHO

1. Protect the rights of non-smokers to breathe clean air
2. Ensure that all health personnel set a non-smoking example
3. Restrict production, promotion and use of tobacco
4. Eliminate sales and marketing to minors
5. Require prominent health warnings
6. Establish programs to assist smokers to stop smoking
7. Provide resources for promoting anti-smoking messages
8. Monitor trends in tobacco consumption

(Laforge et al, 1998)

The above points correspond closely to the policies and activities of the TCP, which has such close connections to the WHO. The full title of the TCP is the Tobacco Control Program of the World Health Organisation in Saudi Arabia. The Report of the TCP includes the policies and activities of the Program. Monitoring tobacco use is covered in Policy 1 of the TCP and warning of the dangers of tobacco is covered by Policy 4. Programs to help smokers to quit are encompassed by Policy 3 and Policies 4 and 5 refer to restrictions on tobacco sales and promotion. The problem of smoking among health personnel is referred to in Activity 4 of the TCP Report - the banning of smoking in government ministries and organisations, which includes the Ministry of Health and its employees.

A ten-point plan for tobacco control was outlined by Jamrozik (2004), professor of primary care epidemiology at Imperial College, London. He outlined the effects of implementing the policies in the plan in Australia, the USA, Canada and Norway. Table 2.3 summarises the ten points and I relate them in the final column to the policies and activities of the TCP. Points of correspondence can be noted between Jamrozik's plan and the WHO policy initiatives in Table 2.2.

Table 2.3. Ten point plan for tobacco control

Issue and initiative	Importance	Reference in the TCP Report
Public places and workplaces: smoke-free policies	Reduces passive smoking, removes role models from children's view	Policy 2 Activity 4
Price: regular increases in the real price of tobacco	Reduces consumption and prevalence, especially effective among adolescents	Policy 6
Public education: funding for schools and the public	Mass media campaigns increase the numbers who quit	Policy 4 Activities 1,3
Promotion: no exemptions for sports events	Important in establishing non-smoking as the norm	Policy 5 Activity 5
Provide treatment: money made available for cessation clinics	Counselling, NRT and bupropion subsidised	Policy 3 Activity 3
Prosecution: increase efforts to enforce/publicise legislation	Publicity has important knock-on effects e.g. sales to minors	Policy 2 Activity 5
Point of sale: products made an under the counter item	Closes further channel of promotion of tobacco products	Activity 5
Production: regulation of nicotine and tar in tobacco	Comprehensive and unified approach	Policy 3
Packaging: move to generic, unattractive packaging	Reduces appeal of tobacco as a lifestyle product	not listed, except in a subsidiary clause (Clause 11)
Public announcements: penalise misleading advertising	Reduces mis-information about tobacco use	Activity 5

Jamrozik (2004: 759)

The policies pursued to control tobacco use in Saudi Arabia are thus based on a large measure of international consensus. In the Report of the TCP, actions to raise awareness of the hazards of tobacco use among various groups in society are listed first among the activities of the Program. These groups are divided into four general areas (to be targeted through the website, printed matter, media campaigns, exhibitions and visits): the public generally, government and private institutions, schools and universities, and mosques.

2.3. The Eastern Mediterranean context

The wider context is important in the formulation of the questionnaire statements and in interpreting the responses in the context of what is known from international, regional and national experience. It is necessary to study this wider context to attempt to establish the realities against which to place the views of the participants in this study.

The role of the WHO is evident in the promotion of similar measures adopted in many countries to combat smoking, particularly among the signatories of the FCTC. This section looks at the impact of such measures in, to use the WHO terminology, the East Mediterranean Region. Just as the TCP was established in Saudi Arabia, so the Syrian Centre for Tobacco Studies (SCTS) was set up in response to the lack of local knowledge and expertise to combat the high incidence of smoking (Maziak et al, 2004,[ii]). Ward et al (2006) report the results of a household survey of a large sample, 2038 adults, in the city of Aleppo. Smoking status was self-reported, so limitations of bias must be applied to any interpretation of the findings. In addition to the spread of smoking in Syria, as documented by the authors, smokers in Syria are shown to be less successful in quitting than smokers in developed countries – for example, about 15% have quit in Syria compared with approximately 50% in the USA. Attempting to explain this, Ward et al (2006) note that this lack of success has a historical dimension – it can be attributed in part to a lack of support for smoking cessation in the past. Neither pharmacological agents nor nicotine replacement therapy (NRT) were sold in Syria, and behavioural counselling services did not exist. In view of these findings, this present study seeks to confirm through the questionnaire the extent to which the clinics in Riyadh were seen as aiding smokers to quit through pharmacological and counselling interventions.

There is some evidence from international studies that health education can be a factor in promoting smoking cessation or preventing initiation (Salaudeen et al, 2011; de Walque, 2010; Kadowaki et al, 2006). Lee and Wang (2002), however, found that while health education could significantly enhance students' smoking knowledge, it did not significantly change the attitudes of students towards smoking. The study in Egypt reported by Ahmed et al (1999) suggested a relationship between education in schools on tobacco risk and smoking prevalence. However, there is no reported methodology of how this survey or the analysis of the data was conducted. Knowledge on the health risks of smoking were linked to attitudes, beliefs and behaviour which indicated that students were less likely to smoke if they were informed about the dangers of tobacco use through education. Islam and Johnson (2005) found that Egyptian adolescents who had greater positive beliefs about smoking were at a higher risk of engaging in any smoking behaviour. This study provided full details of the methods of data collection through a large survey and subsequent analysis using multivariate logistic regression. The authors advocated a strategy of education at all levels in the school and community. Studies conducted in Saudi Arabia support such a strategy in education in

the Kingdom (Mandil et al, 1999; Midhet & Sharaf, 2011). At a community level, Sharaf (2010) concluded that health education for patients visiting the Primary Health Care Centres (PHCCs) for treatment for chronic diseases significantly improved compliance to the advice of doctors regarding smoking. As indicated below, health education is needed to provide information, specifically on the dangers of waterpipe smoking.

A traditional characteristic feature of the East Mediterranean region is waterpipe smoking. It should be noted here for a number of reasons: it is popular in Saudi Arabia; accumulating evidence suggests (Harvard Medical School, 2008; Knishkowy & Amitai, 2005; Maziak et al, 2004, [i]; Smith-Simone et al, 2008; Eissenberg & Shihadeh, 2009) that it is as addictive and dangerous to health as cigarette smoking. It is a social activity, noted by Maziak et al (2011) as taking place in dedicated bars and cafes. The addictive nature of the habit is reinforced by its association with social enjoyment and an accepted form of social behaviour. Waterpipe smokers have not only nicotine dependence but also dependence on the local cafe as the locus of an important social leisure activity (Asfar et al, 2005; Israel et al, 2003; Taha et al, 2010). Finally, its use would appear to be increasing in the region (Rastam et al, 2004; Shaikh et al, 2008).

A number of studies confirmed the nature of waterpipe smoking as a social activity among diverse social groups. Akl et al (2011) reviewed studies of this practice among both school and university students in Saudi Arabia, as well as a smaller number of studies of waterpipe smoking among adults. This was a systematic review of the medical literature for the prevalence of waterpipe tobacco use among both general and specific populations. Of a total of 38 studies, only 4 of these were national surveys. The rest addressed specific populations. Only cohort and cross sectional studies were included in the review. Compared with cigarette smoking, the prevalence of waterpipe smoking was slightly higher in each case. Naeem (2011) reported on two studies of waterpipe smoking among secondary students - Al-Yousaf & Karim, (2001); Amin et al, (2010). In each case, smoking prevalence was over 20% of all students – male and female – who smoked waterpipes on a daily or regular basis. This fell within a pattern that was repeated in studies of this age group in a series of studies reviewed by the authors throughout the Middle East: Oman 9%, Qatar 14%, Bahrain 15%, the UAE and Yemen each 15%, Kuwait 16% and Lebanon 25%.

The study by Al-Yousaf and Karim (2001) was a self –administered questionnaire in the Department of Family and Community Medicine at Al-Kharj Military Hospital, Saudi

Arabia. Schools were selected randomly from all areas of Al-Kharj and questionnaires distributed according to the number of students in the schools. The terms 'smoker' and 'non-smoker' were defined. Student advisers explained to the students on how to complete the questionnaires, the purpose of the study and ensured confidentiality. The problem of reporting bias was certainly a factor, given the way in which the survey was administered. The study by Amin and colleagues (2010) was conducted in Al-Hassa, Eastern Saudi Arabia, as a cross-sectional study with 1652 students of both genders aged 15-19. A self-administered questionnaire was again used, adapted from the Global Youth Tobacco Survey. The article details the population and sampling methods selected. In the final phase, the academic number from school files was used to randomly select the students. In the case of male students, these were approached personally or, in the case of female students, through their female teachers, and they had to present a consent form signed by parents in order to take part. Examining the administration of the questionnaire detailed by the authors, the active participation of authority figures in the data collection process calls into question the results obtained, despite all the assurances of anonymity and confidentiality that were given.

Thus, the barrier of tradition which exists in the region against cigarette smoking is not as strong in the case of waterpipe smoking (Hammal et al, 2008). This may have some roots in the lack of proper knowledge of the harmful effects to health of waterpipe use (Knishkowy & Amitai, 2005; Neergaard et al, 2007; Amin et al, 2010; Hadidi & Mohammed, 2004) with subsequent consequences for its wide acceptance in Arab cultures (Watad et al, 2009). To borrow the concepts of perceived susceptibility to harm and to perceived severity (Rosenstock et al, 1988; Janz & Becker, 1984), this cultural acceptance may negatively impact on the motivation to quit on the part of many waterpipe and waterpipe/cigarette users in the region.

Among qualitative studies, Hammal et al (2008) interviewed 32 adults in Aleppo, Syria, of whom 16 were predominantly cigarette smokers and 16 predominantly smoked waterpipes (narghile in Syria). They found that, while cigarette smoking was often cited as a response to stress, in contrast waterpipe smoking was regarded as a congenial and sociable form of leisure with, interestingly, less social stigma attached. The authors discovered that, among the interviewees, waterpipe smokers regarded the health effects of waterpipe smoking as less harmful than cigarette smoking and created less dependence, suggesting that education about the pharmacological evidence to the contrary is needed in Syria and in all countries, where waterpipe smoking is widespread (WHO, EMRO, 2006). This view is supported by Amin et

al (2010), who found that approximately half the students in their study regarded waterpipe smoking as less harmful than cigarettes. Analysing the nicotine content of 13 commercial brands of tobacco for waterpipes available in Jordan, Hadidi and Mohammed (2004) found that waterpipe smokers were not at a lesser risk from nicotine dependence than cigarette smokers. This finding was confirmed in studies by the WHO, TOBREG (2005), Salameh et al (2008) and Cobb et al (2011).

Maziak's own conclusion was controversial. He could have advocated a strategy of reinforcing traditional cultural and religious attitudes as allies in the struggle to combat smoking, yet he clearly regarded these as insufficiently effective:

The implications of these findings for tobacco control are clear: public health efforts should aim at replacing the passive barrier of tradition with an active one based on proper knowledge about the harmful effects of smoking at all levels (Maziak, 2002:188).

The question of the extent to which such motives for not smoking, or for quitting smoking, might be applicable to males in Saudi society has not been answered, yet these conclusions prompted the formulation of statements in Section A of the questionnaire for clients and in Section B of the questionnaire for health professional staff. This represents a very different approach – some would argue more modern – to the view of the WHO EMRO, and opens a debate whether a combination of public health programs based on both knowledge and tradition would be contradictory and less effective. The results of the survey of Ward et al (2006) suggested another feature of Arab cultures. For women, the attitude of parents (or, if married, of the husband) has a significant influence on the prevalence of smoking among women. Traditional social and religious barriers would make a study of this phenomenon difficult to conduct, yet there is no doubt that an understanding of it would be helpful in targeting awareness campaigns.

This review of the Eastern Mediterranean context has indicated the important cultural phenomenon of waterpipe smoking as a social activity. It is an activity that is considered more acceptable for both men and women than cigarette smoking and it is perceived as less harmful (although the studies cited above show conclusively that this is not the case). Its social acceptability among many sections of society and its increasing use prompted Naeem (2011) to advocate a series of educational and legislative actions to reverse the emerging trend. It must be remembered that the TCP deals not only with cigarette smoking but also with this culturally diverse and complex phenomenon of waterpipe use.

2.4. The influence of religion

Islam has a strong influence on the social values and customs of the population of Saudi Arabia. A number of leading Muslim scholars have reported their views at the request of the WHO (WHO, EMRO [i], undated; Jabbour & Fouad, 2004) on the stance of Islam on smoking. Although there was no such product as tobacco smoking when Islam emerged, yet the religion provides a framework to devise new rules applicable to any period in history (WHO, EMRO [i] undated). Islam teaches that if a person becomes a habitual smoker, he is indirectly poisoning himself slowly and, for a Muslim, that is akin to practising self-harm (Hameed et al, 2002). Among the references cited by scholars is the instruction: 'Kill not yourselves, for verily Allah has been to you most merciful' (Quran 3:29). Another verse states: 'And spend of your substance in the cause of God, and make not your own hands contribute to your own destruction' (Quran 2: 195).

Knowledge of Muslim beliefs is important in understanding smoking behaviour and considering how to intervene effectively to promote smoking cessation in the region (Ghouri et al, 2006; Hameed et al, 2002; Radwan et al, 2003; Islam & Johnson, 2003). In the province of al-Qassim, Al-Haddad et al (2003) collected data from over 1700 patients at 25 randomly selected PHCCs (Primary Health Care Centres). A total of 25 senior general practitioners working in the selected PHCCs were briefed to administer the semi-structured questionnaire, with 44 items, to randomly selected new male patients for personal interview to complete the questionnaire. Among the findings, (overlapping) reasons were given for not smoking (among both current smokers and non-smokers). Of the figures of interest in this review, 92% responded that smoking is forbidden (*haram*) in Islam, while 85% said that smoking is discouraged (*mukrooh)* in Islam. These figures are similar to the attitudes of respondents in Cairo at the same period (Radwan et al, 2003). While a significant proportion of respondents in the al-Qassim study considered that their smoking habit bore no relation to their religious beliefs (Al-Haddad et al, 2003), these were in a minority. This may have some relationship to the findings of Saeed et al (1996), who concluded that religious considerations were much more important reasons for not smoking among never-smokers and former smokers than among current smokers, for whom health reasons were more important.

The questionnaire for health professionals in this study asks whether the clinics spread awareness of the dangers of smoking in cooperation with official bodies (such as educational

institutions) and non-official bodies (which include mosques as well as community and charitable organisations). The teachings of Islam are potentially an ally in the work of the clinics and the TCP in both smoking prevention and in motivating smokers to quit (WHO, EMRO [i], [ii] undated).

The vision of the TCP is to 'make smoking and various ways of tobacco use to be socially unacceptable' (Al-Munif, 2009) and this is reflected among its activities of conducting awareness campaigns during Ramadan and pilgrimage, Hajj. It may be compared with the activities undertaken among the Muslim communities in London with the non-smoking campaign during Ramadan (UK National Smoking Cessation Conference, 2010). The Singapore Health Promotion Board (2010) also runs a quit program during Ramadan.

Qidwai (2004) found that 91% of respondents in his survey at the Family Practice Center, Aga Khan University Hospital, Karachi, gave up smoking during the fasting month of Ramadan, only for the majority of these to resume once the spiritual motivation had ended. A total of 100 patients were interviewed, of whom 96 were males and all were over 18. Respondents were chosen on a basis of convenience sampling – patients sitting in the waiting area who were current smokers were asked to take part. The study was designed as descriptive, and it was not intended to subject the data to statistical tests. A systematic random selection of study subjects was not undertaken and a sample size based on statistical calculations was not calculated.

Qidwai's study does not enquire into why so many patients had quit during Ramadan, though it does ask why (once the 'spiritual drive', in Qidwai's words), was no longer present, respondents had resumed their smoking habit. Out of the 91 smokers who quit during Ramadan, 31 cited a reason for starting again as craving for smoking; 30 cited habit of smoking; 27 claimed that it was due to their enjoyment of smoking and only 4 cited fear of God during Ramadan. Some of the participants, of course, cited more than one reason and of the others, 8 gave no reason. The addictive nature of tobacco use and the strength of established habits combined with the pleasure of smoking were therefore all powerful factors in relapse behaviour. However, the large number of smokers who quit during Ramadan suggests the powerful influence of Islam on their behaviour at this time.

A WHO Centre for Health Development bulletin (2010) characterises the policy approach to strengthening tobacco control as religiously inspired and states that the TCP works within a faith-based paradigm. An undated bulletin of the WHO, EMRO states that linking religion

with health promotion has been a policy goal in the region. In line with this policy it has produced a number of publications: *The Right Path to Health; Health Education through Religion* and *Islamic Ruling on Smoking.* The bulletin claims that religion represents a new frontier for public health in terms of partnership opportunities.

The WHO Centre for Health Development bulletin (2010) affirms that, while smoking bans exist, few cities in Saudi Arabia implement the legislation with the exceptions of Makkah and Madinah. The bulletin notes the key actions taken here and their impact. These provide an insight into how tobacco control policies actually translate into practice. In 2002, the Custodian of the Two Holy Mosques, King Abdullah, declared the two holy cities of Makkah and Madinah to be tobacco-free and there have been concerted efforts to enforce this decree among the two million pilgrims who visit these cities each year during Hajj. Dr Al-Munif reported on the distribution of 1.5 million leaflets during Hajj in 2009:

Billboards and posters with anti-smoking messages, information regarding anti-smoking clinics and fatwas on the subject are on display in the two cities. Buses carrying pilgrims also have anti-smoking posters on them (Rasooldeen, Arab News, 2009 [i])

Table 2.4. Actions taken in the Holy Cities

Key measures in Makkah and Madinah
Banning tobacco smoking around the two Holy Mosques.
Banning tobacco sales within city limits and beyond city limits, prohibiting sales in all food stores and in the neighbourhood of mosques and schools.
Prohibiting waterpipe smoking in cafes and restaurants within residential areas and near mosques, schools and wedding halls.
Extensive campaigns to raise awareness about the hazards of smoking and the tobacco control policy in the cities amongst the public and city visitors.

WHO Center for Health Development (2010)

The combined population of the two cities is approximately 3 million, but numbers swell enormously during Hajj. The prevalence of smoking amongst residents is 21% for males and 1.3% for females (WHO, Center for Health Development, 2010). The attitude of Islam towards smoking determines that un-Islamic acts are not permitted near the most sacred places of worship, the Holy Mosques, associated historically with the prophet Mohammed. Table 2.5 summarises the impact of the measures outlined in Table 2.4, as reported by the same source.

Table 2.5. Impact in the Holy Cities

The impact of the measures
Within the smoke-free areas of the cities surrounding the Mosques, there is very little smoking now and most of the visitors know that it is a smoke-free city and they should not smoke around the Mosques.
In other public spaces, such as restaurants, smoking has continued, though limiting tobacco sales combined with an increased awareness that smoking within the holy cities does not constitute 'good behaviour' means that it has reduced.
In Mecca, in 2008, an assessment of the policy found that 75% of stores had complied with the requirement not to sell tobacco. Fines were issued to the remainder of the shops.
Squeezing the availability of tobacco from retail outlets has stimulated a black market and pushed up the price of tobacco.

WHO Center for Health Development (2010)

The bulletin concludes that the *fatwas* (religious edicts) and opinions of religious leaders provided support and important justification for the tobacco control measures adopted, and it describes the policy of the WHO Eastern Mediterranean Regional Office in working with and providing information to religious leaders and scholars.

Bans on tobacco products may, as indicated, take various forms, including smoking itself, bans on sales or bans on advertising and promotion. Bans on smoking extend to cities like Makkah and Madinah, public places such as airports or shopping malls (Rasooldeen, 2009 [ii]) and workplaces (Halpern et al, 2001; Gao et al, 2011), though their impact on cessation and relapse has been reported to be mixed (Longo et al, 2001). A total ban on smoking would be practically unenforceable. While only one country in the world (Bhutan) has banned the sale of tobacco (in 2004), none has banned smoking itself (Joossens, 2009).

In Saudi Arabian culture, the influence of Islam plays a fundamental role in society, not simply in moral but also in legal terms. As both a spiritual and legal tradition, Islam impacts extensively on Muslim thinking and social customs (Batran, 2003) and, indeed, on the adoption of tobacco control policies themselves in many countries. Underpinning the Islamic legal framework are the principles of minimising the risk of harm to society and to individuals and to maximise the opportunities for collective and individual wellbeing (Khayat, 2000). Islamic law has three basic sources: the Koran, believed to be the direct word of Allah; the Sunna, a collection of the sayings and acts of the prophet Mohammed and the Ijtihad which, drawing on the above sources, allows scholars to consider the merits of new issues and developments (Ghouri et al, 2006). All human affairs are classified into one of five categories: *fard* (mandatory), *mustahib* (encouraged), *mubah* (neutral), *mukrooh*

(discouraged) and *haram* (prohibited). Actions that are *haram* are considered unlawful. There is no single category imposed on all Muslims in every country of the world.

Until the early twentieth century, most Muslim jurists considered that smoking was not harmful to health, but in the light of increasing evidence the legal status of smoking has changed, and numerous *fatawa* now declare smoking to be *haram* (Dien, 2004). This reclassification of smoking has been on the basis of the prohibition in Islamic law of all actions that result in harm to self or others. The Council of Islamic Ideology meeting in Islamabad in May 2000 declared the use of tobacco as an un-Islamic act. This ruling of Muslim scholars was delivered at the request of the WHO, which sought their views on the issue of smoking in the light of the Koran and Sunna (WHO, EMRO (ii) undated).

Among Muslim scholars, in some countries (notably the Indian subcontinent) smoking is now considered *mukrooh* while in others it is considered *haram*. After the WHO Framework Convention on Tobacco Control came into force, 14 predominantly Muslim countries – including Saudi Arabia – ratified it, though it is difficult to know the extent to which anti-smoking legislation is being enforced (Ghouri et al, 2006). Taking just one example, in Indonesia the tobacco industry employs almost 17 million people and this is one of the countries which appears to be reluctant to implement some aspects of the FCTC, whereas Saudi Arabia imports all its tobacco products. Indonesia also relies considerably on revenue from the tobacco industry (Reynolds, 1999).

Tobacco is highly addictive and religious rulings alone, however clear, may have limited influence on rates of smoking, as Ghouri et al (2006) have noted in the case of Middle Eastern and North African countries. Jabbour and Fouad sound this note of caution:

Although all opportunities within society should be exploited to control tobacco use and promote health, religion-based interventions should not be exempted from the evidence-based scrutiny to which other interventions are subjected before being adopted (Jabbour & Fouad, 2004: 923)

However, the WHO is firmly convinced of the benefits of a partnership between religion and public health bodies. In May 1999 a meeting on Tobacco and Religion was held in Geneva at the WHO headquarters as part of the strategy of attempting to use religion in attempts to tackle tobacco use (WHO, EMRO [i], undated). The conclusion from the literature reviewed on the influence of Islam on smoking cessation in Saudi Arabia is that there should be an

emphasis both on health education and on the teachings of Islam to combat tobacco use. The two may be considered complementary, not in conflict, though the greater emphasis should be on the former. The findings among almost 500 male and female health care providers in the study by Al-Mobeeriek et al (2008) in the Eastern Province revealed that 60.5% gave health risks as their main reason for not smoking. The questionnaires were distributed to the subjects at their workplaces after permission from the selected hospitals. Only 4.5% cited religion as the main reason. Although between 70% and 90% of Saudis claim to be aware of the health risks of tobacco use (Siddiqui & Ogbeide, 2001), it should not be concluded that the work of health education is complete in this field. Awareness may be partial or shallow. In routine smoking cessation counselling in Riyadh by male physicians, only 10% used religious reasons (Al-Shahri & Al-Almaie, 1997). This study was conducted with about half of the male PHCC physicians, randomly selected, using a self-administered anonymous questionnaire. Existing practice is focused on counselling on medical aspects, and I conclude that this is the appropriate approach from health care staff, utilising their knowledge and experience as professionals, until evidence to the contrary is produced.

2.5. Promoting smoking cessation

The TCP Report Policy 5 states that there is a complete ban on all types of advertising, promotion and sponsorship of tobacco products (Clause 13) although it is admitted that, like other countries, Saudi Arabia suffers from the presence of cross-border advertising and indirect advertisements in drama and film. Advertising of tobacco in imported newspapers and magazines is banned. The implementation of the legislation, however, is not always observed strictly. For example, the Global Youth Tobacco Survey in Saudi Arabia in 2007 reported that 63% of the respondents had seen pro-cigarette advertisements in the past 30 days in newspapers and magazines or on billboards (AlBedah et al, 2010). Thus, in this study clients and health professionals are requested to give their views on the promotion of tobacco.

Durkin et al (2012) comment on the potential of mass media campaigns to influence smoking cessation and non-initiation. In his survey of students at the College of Applied Medical Sciences in Riyadh, Hasim (2000) found that media influence was considered to be the major source of information on the health hazards of smoking. A number of studies, however, have considered the impact of tobacco advertising internationally and regionally in terms of its negative impacts (for example, Pierce et al, 1991; Tye et al, 1987; Lovato et al, 2011). A study by Feighery et al (1998) indicates the importance of combating the marketing practices

of the tobacco industry in the light of the receptivity of adolescents in particular to these practices. In California, 571 school students with an average age of 13 years and 8 months were surveyed and about 70% of the participants reported at least moderate receptivity to tobacco marketing materials. The decision to smoke includes awareness of, interest in, and shifting attitudes to the product, desire and intentions to use the product, experimentation and, finally, regular use. The authors of the study conclude that tobacco companies conduct highly effective marketing campaigns. These may function to move young teenagers from experimentation toward regular tobacco use.

Our results demonstrate that there is a clear association between tobacco marketing practices and youngsters' susceptibility to smoke (1998: 123)

It is impossible to separate the effects of marketing from other factors which may induce young people to smoke. The conclusions of the study by Feighery et al have been supported by other research linking tobacco consumption with tobacco promotion (Arora et al, 2008; Lovato et al, 2011; Rimpela et al, 1993; Botvin et al, 1993; Tye et al, 1987). In contrast, other studies have found little or no effect of tobacco marketing (Boddewyn, 1989; Saffer & Chaloupka, 2000).

Advertising campaigns may also be used positively for smoking cessation (Netemeyer et al, 2005; Langley et al, 2012; Czarnecki et al, 2010). Flay (1987) evaluated 40 mass media programs/campaigns designed to reduce cigarette smoking. He identified one clear policy implication, namely undoing the effects of decades of tobacco promotion and countering myths of the social acceptability of smoking. In this study, the clients' questionnaire (Statement A7) and the questionnaire for health professionals (Statement B7) check awareness of the activities of the TCP in spreading the anti-smoking message.

To study how mass media cessation campaigns impacted on smokers, Borland and Balmford (2003) conducted a survey of 1000 smokers in Australia. Following the Stages of Change Theory, they considered effects on smokers who were contemplating quitting rather than introducing the issue to those who were not thinking about quitting. However, they found that even among this latter group, advertising encouraged more than one-third to progress to a more advanced stage. Following the effects of the National Tobacco Campaign introduced in Australia in 2001, the authors concluded that the Campaign had resulted in increased frequency of negative attitudes towards smoking and an increase in quitting related thoughts and actions. These findings and those of Burns (1994) support those who advocate the use of

media campaigns to change public attitudes and behaviour towards smoking in Saudi Arabia - especially the youth (Jarallah et al, 1996). Jarallah and colleagues argued that the media had not been used adequately in the Kingdom to spread the anti-smoking message.

The intensity and duration of mass media campaigns may influence effectiveness (Langley et al, 2012; Saffer & Chaloupka, 2000), but length of follow-up and concurrent events in the community make this difficult to verify (Bala et al, 2008). The TCP has itself adopted a cover-all approach. There are the activities on World No Tobacco Day and the campaigns during Ramadan and Hajj and at the local level there are the day-to-day campaigns using information leaflets to be picked up at clinics and hospitals or visits to the doctor.

The use of Internet-based interventions in assisting smoking cessation was found by Civljak et al (2010) to have no consistent effects. Etter (2006) was similarly cautious in his findings. However, the study by Myung et al (2009) concluded that there is sufficient clinical evidence to support the use of Web-based smoking cessation programs for adult smokers. This position was supported by Shahab and McEwen (2009) who found that interactive, web-based interventions for smoking cessation can be effective in aiding quitting. They were, however, unable to compare their effectiveness with static smoking cessation websites. The TCP in Saudi Arabia now uses Facebook, YouTube, Google, Hotmail and Messenger to try to reach a young audience in the Kingdom (KSA, Ministry of Health, TCP, undated) and has its own website. An e-based smoking cessation campaign has been created, aiming to target one million smokers in the Kingdom. The developers of the program chose the month of Ramadan in 2008 as the start date, which is novel in Saudi Arabia because it encourages smokers to send their e-mail addresses to a website. This will keep in communication with the smoker electronically (Al-Lehiany & Stanley, 2009). It is known from the study by Al-Bedah et al (2011) that almost half of the smokers in that study used the Internet daily.

2.6. The influence of tobacco warning labels

The TCP aims to implement updated Gulf standard specifications on tobacco product labelling in line with Clause 11 of the FCTC Report (2003). Both questionnaires in this study relate to labelling in terms of the future development of the Program, since this new legislation is constantly under review (Framework Convention Alliance 2012). Studies confirm, however, its importance. A number of studies have concluded that warnings on cigarette packets are an effective means of communicating the health risks of smoking (for example, Mannocci et al, 2012; Hammond et al, 2004; Hammond et al, 2007).

The impact of such warnings was studied by Hammond et al (2006) in a telephone survey of over 9000 adults in the USA, the UK, Canada and Australia. Even in these developed countries, there were significant gaps in the knowledge of the risks of smoking. The authors reported that smokers who noticed the warnings were more likely to endorse health risks. In Canada, for example, where package warnings include information about the risks of impotence, smokers were 2.68 times more likely than those in the other three countries to agree that smoking increases the risks of impotence. Comparing tobacco warning labels, Aftab et al (1999) noted that in almost every respect measured, smokers in developing countries have historically received inferior information on the dangers of smoking compared with smokers in developed countries. Consumers in 48% of developing countries received packet warning labels of tar and nicotine levels, compared with 83% of consumers in developed countries. Most warning labels (73%) appeared on the side of the pack only in developing countries, in contrast to most labels in developed countries (78%) which appeared on the front and back of the packs.

Health warning labelling practices on waterpipe products in Lebanon were evaluated by Nakkash and Khalil (2010). They note that there are no WHO FCTC compliant waterpipe-specific health warning labels on waterpipe tobacco products. As there are common misconceptions about the hazardous nature of waterpipe smoking (see Section 2.3.1), warning labels need to address such false notions as, for example, the water in the bowl filters the toxicants or the fruity aroma of the tobacco means the smoke is harmless.

The most recent information on the labelling of tobacco products in Saudi Arabia is provided by the Framework Convention Alliance (2012). The warnings will depict different illnesses and cancers caused by smoking, and cover 50 percent of the package's front and back, with an Arabic warning on the front and an English warning on the back. The new standard will replace the old one, which covered only about 16 percent of the package's front. There will be two specific warnings for shisha (waterpipe) tobacco.

2.7. The role of the smoking cessation clinics

Smoking cessation clinics play an important part in the implementation of the policies of the TCP, in particular offers of help to smokers to quit (Policy 3) and warning of the dangers of tobacco use (Policy 4). The clinics are also central to the goals and vision of the Program and their activities are outlined in the TCP Report. In this dissertation, perceptions of the role of

the clinics in raising awareness and helping smokers to quit are evaluated in the questionnaires for the clients and health professionals.

Some earlier studies appeared to suggest that the establishment of specialist clinics for smoking cessation was of limited value. Fiore et al (1990) used data from the 1986 Adult Use of Tobacco Survey in the US. They found that 90% of successful quitters do so on their own, without taking part in an organised program. They also found that quit rates (defined as abstinence for > 1 year) were twice as high for those who quit without assistance. On the other hand, advice was important. Quit attempts were almost twice as likely to occur among smokers who received non-smoking advice from their doctors, compared with those who received no such advice. Set against these findings, the authors pointed out that those entering cessation programs were more likely to be those who had tried and failed to quit on their own and that these cases tended to include heavy (>25 cigarettes per day), more addicted smokers. Clinics can help smokers to quit on their own and they can provide support programs. Both physicians and clinics can apply the 4 As: ask about smoking at every visit; advise smokers to stop at every opportunity; assist by setting targets and providing educational material and appropriate medication and arrange follow up to monitor progress. (Glynn, 1990). To these, Al-Doghether added a fifth A: assess willingness to quit (2004 [i]). In their survey, Fiore and colleagues (1990) found that about 30% of US smokers made a quit attempt each year, but of these only about 8% were successful.

Al-Doghether (2004 [i]) reported on more recent findings on the connection between quit rates and assistance to quit. He cited US estimates that between 20% and 35% of quit attempts were associated with medication use or other forms of assistance. Those who did use some form of assistance enjoyed more than double the success rate of those who tried to quit on their own (20% vs. 8%). His conclusion is that clinical interventions, even when minimal, were more effective than no intervention at all, as they at the least may increase self-efficacy in quit attempts. Even in terms of personal expenditure, the provision of nicotine replacement therapy (NRT) in the form of nicotine patches through the clinics increases their use. Without this, a smoker using the patch for 10 weeks (an average course) will incur a cost comparable to the cost of buying cigarettes over the same period (Al-Doghether, 2004 [ii]).

A number of conclusions from Fiore et al's study were suggested by Glynn (1990). These prompted enquiries in the questionnaires in the present study, specifically on the extent and effectiveness of the services provided by the clinics in Riyadh. Glynn referred to the importance of a variety of providers and a menu of methods to motivate as many smokers as possible to quit and to assist them in maintaining their quit attempt. This suggests the dual role of smoking cessation clinics, raising awareness and treatment. Delarue (1973) described this with reference to the creation of the Smoking Withdrawal Study Centre in Toronto. The author questioned whether anti-smoking clinics might become economically practical for community use. It was realised that the smokers seeking help in such clinics were already looking for special advice and help to quit. Thus, the clinics could also potentially have a wider function. Their role is not only to assist individual smokers but they have a wider role in helping to create a social environment in which cigarette smoking is no longer an acceptable custom.

Prior to the initiation of the TCP in Saudi Arabia, physicians were referring patients to anti-smoking clinics, operated by charitable organisations, for support. Al-Shahri and Al-Almaie (1997) found that 39% of the 183 primary health care physicians who formed their study in Riyadh were conducting such referrals. Their questionnaire was completed by approximately half of the PHCC physicians selected at random in Riyadh. Medical and counselling responsibilities are accompanied by a socio-cultural role, which Delarue described as a facilitation-dissuasion equation. Table 2.6 summarises how the smoking cessation clinics form part of the overall social context.

Table 2.6. The smoking habit and smoking clinics

FACILITATING INFLUENCES	DISSUASIVE INFLUENCES
<u>The Risk Factor</u> Social acceptability Smoking exemplars Advertising impact	 Public education Governmental intervention
<u>The Smoking Environment</u> Pleasurable experience Relief from tension Habituation and dependence	<u>Exemplar Influence</u> Non-smoking exemplars (family, peers, health care staff) Social unacceptability Institutional example
	ANTI-SMOKING CLINICS

Adapted from Delarue (1973: 1168)

Here, the importance of medical staff in setting an example is stressed as part of the educational and motivational role of the clinics. In a conclusion that is relevant to the role that can be played by social (and here must be included religious) institutions in combating smoking, Delarue emphasises the wider context that it is essential to take advantage of all possible avenues whereby smoking can be combated. Non-medical agencies should coordinate their efforts with those of the clinics so that experience can be pooled and efforts combined.

Finally, the third service provided by the clinics, as stated in the Report of the TCP, is to refer patients to specialist hospital units where necessary for treatment. New hospital facilities are being created to deal with such referrals. In 2008 the New Jeddah Clinic Hospital was the first private hospital to establish a smoking cessation unit and in Riyadh a model anti-smoking clinic was set up with state-of-the-art equipment to treat smokers and provision to train health workers in the field. Training includes clinical therapy and counselling and the clinic publishes literature and makes documentary films to reduce smoking prevalence (Rasooldeen, 2009 [iii]).

2.8. The operation of smoking cessation clinics

In Saudi Arabia, there is a need to follow the strategy pursued by the NHS in England. Over a period of 10 years, the English Stop Smoking Services have increased their reach and impact. They were used by about 8% of all smokers in 2010/11. This represents a three-fold increase with a minimal decline in success rates (West et al, 2013). In the UK, the Health Education Authority (HEA) issued guidelines on smoking cessation for health professionals (West et al, 2000). This article was a key source for this section. These guidelines included recommendations on specialist smoking clinics. In a discussion of the role of smoking cessation clinics, these guidelines provide a detailed source of information. The first recommendation is that, *where possible, smokers should have access to a specialist smokers' clinic.* In areas with good public transport and a high population density, the clinic may be centrally located. Questions about the availability of transport and the accessibility of clinics were, therefore, included in my research questionnaires. While the Riyadh clinics are certainly located in areas of high population density, the recommendation of the HEA has not been applied yet in Saudi Arabia, to the effect that in other areas, a peripatetic smoking cessation specialist should see clients in local health centres.

Secondly, the clinics should be staffed by specially trained personnel. This is essential in order to provide *effective support and accurate advice and information.* Research in the field of smoking cessation requires specialist professionals who are aware of the latest research. Attempting to fit this role alongside other duties will reduce the effectiveness of the support offered by the clinics. I included questions in the survey of both clients and staff in the clinics on this point. I was, however, unable to access any published information on the extent to which training of health professionals in the field of smoking cessation was being successfully conducted by bodies such as the New Jeddah Clinic Hospital.

Thirdly, the number of clinics should be commensurate with demand. The dangers of under provision are self-evident – many smokers who could enter a smoking cessation program may receive inadequate support or may not receive any treatment. Overprovision may lead to the danger of demotivated staff as well as wasting resources. Questions in the surveys enquired into levels of satisfaction with the number of clinics in Riyadh.

Fourthly, in the UK context, the HEA then recommends that both individual and group treatment should be available to clients. The guidelines suggest that protocols should be developed for individual treatment in cases where some smokers will prefer not to be seen in a group context. The questionnaire for clients used in my survey refer to the 'high degree' of privacy and confidentiality guaranteed to clients attending the clinics. This reflects the practice of individual, rather than group, counselling offered by the Riyadh clinics.

Fifthly, advice on the use of NRT or other pharmacotherapies should be incorporated into the practice of smoking cessation clinics. The HEA refers to advice on the expectations and appropriate use surrounding NRT treatment as part of an integrated withdrawal treatment regimen. Clients in my survey were asked for their perceptions of the medical care which they received in the clinics in Riyadh, though in retrospect this question should have referred more specifically to NRT.

Finally, the guidelines recommend the implementation of the withdrawal orientated treatment model in the clinics. This approach was adopted in the UK at the Maudsley Hospital Smokers Clinic (Raw, 1975). In outline, it starts from the proposition that smokers seeking help are addicted to nicotine. Hence, a major obstacle to successful quitting is their dependence on

nicotine and the discomfort experienced during attempts to quit. Treatment, therefore, is targeted on helping clients to overcome nicotine deprivation. It uses NRT and a designated group-treatment format and involves the preparation of clients, the use of NRT chewing gum, and the type of information and advice given to clients throughout the course of treatment.

The literature on UK smoking cessation services is significant for a number of reasons. The 1998 White Paper *Smoking Kills* outlined for the first time a national strategy to reduce smoking. The agenda contained many of the measures that would later be included in the WHO FCTC and, subsequently, the Saudi TCP – a ban on tobacco advertising, price tobacco increases, measures to curb smoking in workplaces and public places and more funding for smoking cessation services. In this context, treatment for smoking cessation was regarded as an important element in a raft of tobacco control measures (McNeill et al, 2005). The parallels with the Saudi experience and the formation of the TCP are obvious.

There are also parallels with the teething troubles of English and Saudi efforts to control tobacco use. Nevertheless, an analysis of a number of studies and results of clinical trials showed that in England, over the first period of 4 years (1999-2003), smoking treatment services had achieved a significant success rate: 4-week abstinence of 53% (CO validated); 52-week abstinence of 15% (Raw et al, 2005). The lessons from this initiative are summarised by the authors as follows: the need to set national training standards and increase national training capacity *before* launching smoking cessation programs is emphasised. So, too, is the need to standardise pharmaceutical treatments and to make these widely accessible *before* launching services. Finally, some form of monitoring is essential. Similar conclusions were reached by Bauld et al (2005), based on a postal survey of smoking cessation coordinators in 2002 and semi-structured interviews with 50 smoking cessation staff in two health regions. There is no published evidence for Saudi Arabia that such targets have yet been formalised.

2.9. The evaluation of smoking cessation clinics

When the NHS Stop Smoking Services (SSS) were established, central government guidelines were that the satisfaction of clients with those services should be measured. No such guidelines were recommended following the implementation of the TCP in Saudi Arabia. However, the establishment of the Arabian Centre for Tobacco Control under the

direction of Dr AlBedah is a hopeful sign that research and monitoring into smoking prevalence and cessation in Saudi Arabia will be taken forward and rigorous evidence-based studies may be initiated as a basis for future policy. My study undertakes only a descriptive contribution to this essential task, inspired by Qidwai's survey in Pakistan (2004). However, more recent research in the UK has now suggested a tool and a method of analysis for routinely measuring client satisfaction with smoking cessation services (May et al, 2009).

In 2000, the UK Department of Health recommended that the views of clients on the quality of NHS Stop Smoking Services (SSS) that they received should be monitored. No guidance, however, was provided on how this assessment should be conducted (May et al, 2009). No standardised methods of data collection or analysis were followed in subsequent attempts to implement these guidelines. The contribution of May and colleagues was to develop a tool and methodology for measurement of client satisfaction with these services. The benefits of collecting this data could be informative in measuring outcomes and are undoubtedly useful in improving service delivery and in giving patients a say in the services which they use.

The authors claim that high response rates are required in order for the results of client satisfaction surveys of this type to be valid. For this reason, a first-stage postcard survey was devised, containing just 3 key questions to measure overall satisfaction with the NHS SSS. These must be detailed in full, because they provide a model for future client satisfaction surveys that could be applied in Saudi Arabia. The first question is: *'Overall, how satisfied were you with the support you received to stop smoking?'* Likert-scale options were: *1. very satisfied 2. satisfied 3. unsure 4. unsatisfied 5. very unsatisfied.* The second question is: *'Would you recommend this service to other smokers who wanted to stop smoking?'* The response options were: *0. no 1. unsure 2. yes.* The final question is: *'Have you smoked since your last appointment with the service?'* Response options were: *1. No, not a single puff 2. Yes, just a few puffs 3. Yes, 1-5 cigarettes 4. More than 5 cigarettes.*

The postcard also had space for free comments and these have been analysed in the article by May and colleagues. The items in the postcard survey also formed the basis of a 23-item questionnaire completed by a sample of clients. However, the complete survey allowed for a more in-depth indication of the satisfaction of clients with the service. This was sent to a randomly-generated sample of 99 clients (33% of the sample who had received the postcard survey). The additional questions covered whether clients would return to using the service

again, if necessary, and what welcome they thought they might receive. They were asked about the ease of contact and appointment times offered by the service. Was it easy to arrange treatment? Were they offered a choice between individual and group treatment? How useful was group treatment? They were asked about the choice of medication offered to help their quit attempt and the usefulness of the advice given to them. How supportive were staff employed by the services? Was CO monitoring useful? These and the other questions in the complete questionnaire all form a model for smoking cessation satisfaction surveys.

The methodology followed by the survey is described in detail by May and colleagues (2009). It was carried out over a month in late 2007, and a total of 298 clients were chosen for the postal survey. These were clients who had agreed a quit date with the SSS the previous quarter. If this satisfaction survey were to be applied to the smoking cessation clinics in Saudi Arabia, it could provide the basis for regular monitoring. It would be a different setting from the UK survey, which was based mostly on clients (72%), who were treated in general practice and others who were treated by specialist advisors, community pharmacies, midwives and drop-in clinics among other diverse settings. This need not, however, represent any barrier to its adaptation.

2.10. Motivation and behaviours related to smoking cessation

Many smokers make several unsuccessful quit attempts before they finally succeed. Only about one-third of smokers try to quit each year and 75% to 80% of those who try relapse after less than 6 months of abstinence (Zhou et al, 2009).

The UK qualitative study by West and colleagues (undated reference) which was carried out in 1996 had, as one of its objectives, to *assess the prevalence of motivation and behaviours related to smoking cessation*. It forms a model for such research in Saudi Arabia, alongside how to measure the satisfaction of clients with smoking cessation services.

Based on the results, the authors concluded that beliefs about the harmful effects of smoking on future health were positively associated with making a quit attempt. The two key aspects of the process of smoking cessation are making a quit attempt and maintaining abstinence after it (West et al, 2001). In this study, respondents were followed-up 1 year after the initial measurements and asked to report on any attempts to quit during that year. From this, West

and colleagues concluded that the factors for making a quit attempt included past quitting behaviour, intention to quit, concerns about the harmful effects (reinforcing the 1996 UK study results) and lower enjoyment of smoking. One year, however, is a long period over which to recall all attempts, so the ATTEMPT cohort study (West et al, 2006) followed-up smokers every 3 months. This enabled more accurate estimates of the quit attempt and relapse rates to be calculated. The ATTEMPT study was a longitudinal, Web-based cohort study of smokers between the ages of 35-65 who smoked a minimum of 5 cigarettes per day. The participants were recruited from large Internet panels in the US, Canada, the UK, France and Spain. These panel members had registered voluntarily and agreed to participate in various online studies. A total of 3645 met the inclusion criteria required. Smoking cessation outcomes (quit attempts and relapse) were recorded every 3 months.

It was necessary for the study to define basic terms, and these definitions could be used in similar studies applied in other countries, such as Saudi Arabia, to assess motivation and behaviours related to smoking cessation. A quit attempt was defined by a 'YES' response to the question: *During the past 3 months (90 days) have you made a serious attempt to stop smoking for good that lasted for at least 24 hours?* This ensured that only serious quit attempts were included in the data recorded. Relapse was defined using two questions: For those who reported making a quit attempt in the past 3 months, a 'YES' response to the question: *Are you currently a cigarette smoker?* classified them as relapsed. For subsequent assessments, a 'YES' response to this question: *In the last 3 months have you smoked any cigarettes (even a puff)?* classified them as relapsed. Motivation to quit was measured simply on a 10-point Likert scale. Respondents described their current motivation to quit on a scale of 1 = not at all motivated to 10 = highly motivated.

The study estimated that 74% of those intending to quit smoking in the next 3 months would actually make a quit attempt during the next 18 months. The results showed that respondents who had made more quit attempts in the past were more likely to make a new attempt when compared with those who had made fewer past attempts. In terms of relapse rates, use of smoking cessation medication at the time of quitting was associated with a lower likelihood of relapse.

The important findings have been summarised by Zhou et al (2009). The three sets of studies by West and colleagues point to the conclusions reached in the 2006 published study.

Higher motivation and intent to quit predicts the likelihood of making a quit attempt. However, neither of these factors is associated with subsequent relapse. Smokers who have recently made a failed quit attempt are more likely to try again, but they are also more likely to relapse than those who have not tried recently. We have, therefore, a general picture of habitual quitters who repeatedly try and fail to stop smoking.

The ATTEMPT study confirms the importance of smoking history and motivation/intent in generating quit attempts, but other variables are significant once the attempt has been made. The study identified nicotine cue and withdrawal symptoms, plus craving, as critical factors to be addressed to maximise success rates from cessation attempts.

So, this opens the possibility of conducting a cohort study in the Eastern Mediterranean region, using the same questions and methods of analysis to assess the factors that influence quit attempts and relapse. For the moment, the conclusions from the research of West and colleagues suggest the need to tailor smoking cessation treatments to the findings outlined above. They indicate the importance of understanding motivation and behaviour in referral of patients to specialist smoking cessation clinics and their effective treatment when they present themselves at the clinics.

2.11. Motivation and dependence

Clinicians must be able to assess both dependence and motivation to quit (West, 2004). The two aspects are related. Treatments to assist in smoking cessation will not work in smokers who are not highly motivated to quit. Heavy smokers may lack confidence in their ability to quit and therefore show low motivation. On the other hand, lighter smokers may also show low motivation, but for the opposite reason – they believe that it will be easy for them to quit when they want in the future. The connection between dependence and motivation is stated by West (2004) in the following terms: motivation to quit can be assessed by asking simple questions; once a decision to stop is made, success is determined more by the level of dependence than the degree of motivation. Heavily dependent smokers can be identified through asking simple questions.

There are quantitative approaches to measure dependence. The Fagerstrom test for nicotine dependence is the most widely used (Heatherton et al, 1986). The higher the score in the questionnaire, the greater the level of dependence. West (2004) reports that of all the items in

the questionnaire, the number of cigarettes smoked daily, and time to the first cigarette of the day appear to be the most significant indicators of dependence. High dependence smoking is considered to be at least 15-20 cigarettes per day and/or smoking within 30 minutes of waking. I was unable to find evidence in the literature that this test was used in Saudi Arabia. Measurement of dependence is relevant to the cessation intervention selected for each individual client. West (2004) outlines this relationship. The nicotine dose should be related to measures of dependence, with higher strength forms of NRT recommended for heavily dependent smokers. This study should have asked clients to self-report their measure of dependence, but it is clear that clinics should adopt the Fagerstrom test and regularly update it for each client.

The TCP has to understand motivation - in the Saudi socio-cultural context - to take up smoking, to continue smoking and to attempt to quit smoking. Only then can it conduct effective interventions in both prevention and treatment. In both education and in treatment, tobacco control programs are faced with the challenge of influencing individual behaviour. Measures aimed at the whole of society, such as raising awareness of the dangers of tobacco use, form part of such programs, along with policies relating to how individuals are to be treated to help them to quit.

Smokers who are not highly motivated to quit will not respond to treatment programmes. Smokers who do want to quit have problems of dependence that will influence the choice of clinical intervention (West, 2004). A simple qualitative test of motivation to stop smoking is proposed by West (2004). If the answer is 'yes' to the following questions, then behavioural support and/or medication should be offered: Do you want to stop smoking for good? Are you interested in making a serious attempt to stop in the near future? Are you interested in receiving help with your quit attempt?

It should not be assumed that, for each individual, motivation to quit will remain constant over time (West, 2004). There may be changes in the immediate environment of smokers that influence their smoking behaviour. Evidence for this in the workplace is provided by the study of Gao et al (2011) in China, which evaluated different worksite smoking control policies and their association with the smoking behaviours and attitudes among the male workers. The study, conducted in seven different sites among over 1000 workers, found that a smoke-free workplace policy was associated with lower smoking prevalence and daily cigarette consumption. Smokers in such workplaces smoked 3.4 cigarettes less per day, made

more quit attempts, were more confident in their ability to quit and more willing to accept a company sponsored cessation programme than workers in sites that only restricted smoking.

Motivation to quit may, therefore, be influenced by environmental changes, some of which can be effected by legislation. This is highly significant, since the TCP is dedicated to implementing a series of measures which will impact on individual motivation. Some of these measures relate to education and others to legislative interventions – bans, restrictions on sales and smoking in public places, labelling practices and tax increases. The message for tobacco control programmes is clear – intervention through legislation or education can promote smoking cessation. The economic benefits for workplace productivity were studied by Halpern et al (2001) in the USA among 300 employees at the reservations office of a US airline. Their research indicated that workplace productivity increased and absenteeism decreased among former smokers as compared to current smokers. The connection between social context and individual behaviour is incontestable in the area of smoking cessation. The reality of addictive behaviour is surely that individual behaviour influences the environment and is in turn influenced by the environment, as socio-ecological models of health suggest (Stokols, 1992; McLeroy et al, 1988).

There are no references in the Report of the TCP to any theories of motivation which underlie its policies of prevention or cure. As indicated above, the activities undertaken follow international precedents and practice. The approach is pragmatic. Yet pragmatic approaches to any practical problem are often based on some theoretical assumptions which remain implicit (Ennis, 1982; Leventhal & Cleary, 1980). In this dissertation, the importance of motivation is primarily to explore what prompted smokers either to start smoking or to quit.

2.12. Behavioural and counselling interventions

One major challenge facing health professionals in the field of smoking cessation is how best to relate the study of psychosocial processes underlying tobacco use with a complex media and policy environment that influences and reflects how society regards the problem of tobacco use (Croyle & Backinger, 2008). Some aspects of this environment in Saudi Arabia have been referred to in the review of the literature. As has been argued in this chapter, social contexts have to be considered in the formation of individual health behaviours. At the same time, as Al-Doghether (2004 [i]) argues, behavioural counselling for individual smokers must form part of the treatment in the smoking cessation clinics. Health psychology posits

that the whole person should be treated and not simply the physical changes that occur due to ill health (Bennett, 2000; Connor & Norman, 1995). This involves encouraging changes in beliefs and coping strategies and adherence to medical recommendations (Taylor, 1999). Two distinct but complementary interventions are therefore called for in Saudi Arabia, behavioural and pharmacological, by Al-Doghether (2004 [i], [ii]). The survey in my study seeks the views of service-users and service-providers in the clinics on how effective both forms of treatment in the clinics are perceived to be.

Direct trials of interventions using different theoretical approaches to smoking cessation behaviour show little evidence to favour one form of treatment program over another (Lancaster & Stead, 2008). It is clear, as some recent studies have attempted (Abraham & Michie, 2008; Michie et al, 2011 [i]; Michie et al, 2011 [ii]), that the component elements of effective behavioural interventions need to be identified. Michie et al (2011 [ii]) found no less than 43 behavioural change techniques for smoking, which they classified according to four basic functions: directly addressing motivation (e.g. by providing rewards contingent on abstinence); maximising self-regulation (e.g. facilitating barrier identification and problem solving); promoting adjutant activities (e.g. advice on medication to quit); and supporting other techniques, such as building rapport with counsellors. The authors consider this a basis on which to evaluate behavioural interventions and outcomes.

Behavioural support aims to support motivation to resist the urge to smoke and develop people's capacity to avoid smoking. These interventions last typically only a few months (Aveyard & Raw, 2012). A systematic review of 22 trials comparing individual counselling to a minimal behavioural intervention for smoking cessation was conducted by Lancaster and Stead (2008). They failed to detect any significantly greater effect of intensive counselling compared to brief counselling. A study by Stead et al (2008 [i]) found, however, a small but consistent effect of brief, therapist-delivered interventions on smoking cessation.

The length, number and frequency of individual counselling sessions, the provision of concurrent pharmacological treatments and the provision or non-provision of self-help materials all varied across the studies reviewed. Recruitment also varied across these studies. None, however, recruited their study population from smoking cessation clinics and only two (Fiore et al, 2004; Aveyard et al, 2007) recruited smokers from primary health care centres. Fiore et al reported that psychosocial treatment components did not significantly increase abstinence rates. Aveyard et al reported a similar finding - primary care smoking cessation

treatment should provide pharmacotherapy with sufficient support only to ensure it is used appropriately, and those in need of support should be referred to specialists.

Specialists in counselling should be available in smoking cessation clinics, for these deal with a health behaviour that is related to nicotine addiction, so Aveyard et al (2007) advocate different approaches to treatment in the PHCCs. In their study into smoking cessation treatments at the individual level, Aveyard and Raw (2012) argue for the importance of brief interventions by health care professionals, although most people who hear the advice will not act on it and most of those who do act on it will not succeed (Stead et al, 2008 [i]). Although Aveyard and Raw acknowledge this reality, they consider that behavioural support, when combined with pharmacotherapy, is effective. They cite a review of random control trials (Moore et al, 2009) suggesting that behavioural support plus nicotine replacement therapy led to more than double the abstinence rate than did brief advice to quit or no intervention – the usual option for health services for smokers with no immediate plans to quit (Aveyard & Lindson, 2011). These trials support the views expressed by Al-Doghether (2004 [i] [ii]), therefore, for counselling in the clinics in Saudi Arabia.

There have been no published studies into behavioural interventions to promote smoking cessation in Saudi Arabia. Al-Doghether (2004 [i]) has, however, referred to the need for more clinical intervention, even if minimal, by health professionals which, he claims, could have a great influence on Saudi smoking cessation levels, but has been underused. There would be value in behavioural intervention training for smoking cessation practitioners in the smoking cessation clinics, similar to the courses now available in the UK (Brose et al, 2012).

The study carried out by Jarallah et al (1999) analysed socio-demographic influences on smoking prevalence in Saudi Arabia, indicating similar figures for both businessmen and manual labourers. Other factors must be operating in the Kingdom, but I argue that these are socio-cultural rather than socio-economic. This is not to deny the evidence from international studies, relating income and smoking status (Young-Hoon, 2012; Flint & Novotny, 1997; Cheah & Naidu, 2012). Poland et al (2006) argue that in many countries in the world social context is a factor in the growing concentration of smoking among the socially and economically marginalised. I suggest only that, as a factor in tobacco use, socio-economic status in Saudi Arabia may be less significant than in other countries that have been the subject of investigation (AlBedah & Khalil, 2013).

I consider that the social meaning of smoking in the context of the everyday lives of individuals is significant (Poland et al, 2006). Indeed, I suggest that in this social context, culture is more significant in Saudi Arabia than economic status and that this can be viewed at various levels: micro (family and peer networks), meso (school, college, workplace, and neighbourhood) and macro (policy, social acceptability, media).

Table 2.7. Summary of selected papers on behavioural interventions

AUTHOR (S)	THEME
Al-Doghether (2004 [i], [ii])	The case is presented for combining behavioural and pharmacological treatment to promote smoking cessation.
Michie et al (2011 [i], [ii])	The component elements of effective behavioural treatments for smoking cessation are identified. Evaluation of outcomes should be conducted on the basis of four basic functions indicated.
Lancaster & Stead (2002)	Meta-analysis of studies indicated that brief counselling is as effective as intensive counselling in changing smoking behaviour.
Fiore et al (2004) Aveyard et al (2007)	The findings of these studies support the conclusion reached by Lancaster & Stead (2002)
Moore et al (2009) Aveyard & Raw (2012)	These studies provide empirical evidence to support the view of Al-Doghether (2004) of the value of combining behavioural support with pharmacotherapy.
Jarallah et al (1999)	The study concludes that socio-cultural influences are more significant than socio-economic influences in Saudi Arabia.
Flint & Novotny (1997) Poland et al (2006) Young-Hoon (2012) Cheah & Naidu (2012)	Studies in other cultures have found socio-economic influences to be significant, providing evidence relating income to smoking status. This contrasts with the findings of Jarallah et al (1999) for Saudi Arabia.

2.13. Interventions in treatment: Pharmacotherapy

The questionnaires for clients and health professionals in the smoking cessation clinics enquire into the availability and perceived effectiveness of both counselling and pharmacological interventions. In Saudi smoking cessation clinics, tobacco dependence is treated through repeated interventions depending upon the chronic condition of the smoker (Al-Doghether, 2004 [ii]). Physicians use interventions that allegedly achieve long-term cessation at more than double the rate of cessation attained by smokers without treatment, which is claimed to be 20% vs. 8% (Al-Doghether, 2001). Due to the proven health benefits, every smoker can be treated by intervention that at one stage includes pharmacotherapy. Since pharmacotherapy increases the quit rates of many of the cessation attempts, particularly in the case of nicotine-dependent patients (Tang et al, 1994; Silagy et al, 1994; Fiore et al, 1994; Law & Tang, 1995; Thorndike et al, 2002), every smoker is given suitable pharmacotherapy that supports his cessation attempts, except when contra-indicated. The pharmacotherapy methods in use in Saudi Arabia are safe and effective (Al-Doghether, 2004 [ii]). However, the Fagerstrom test for nicotine dependence or the Heavy Smoking Index should be routinely applied to provide a quantitative index of dependence (West, 2004; Perez-Rios et al, 2009; Chabrol et al, 2005). The main value of measuring dependence in tailoring cessation interventions to individual smokers is in the choice of pharmacotherapy (West, 2004).

Clinicians normally use nicotine replacement therapy (NRT), anti-depressants and other drugs like Bupropion-SR that have an efficacy of 27% at 6 months and these are claimed by Al-Doghether to be the most effective cessation aids in use in Saudi Arabia (Al-Doghether, 2001). Other cessation methods such as acupuncture and hypnotherapy (White et al, 2011; Lambe et al, 1986; Carmody, 2011) are also practised but these methods need to be made more effective through research. Although many smokers quit smoking on their own, this is generally after several attempts. A US study found that more than 90% of unaided cessation attempts fail (US Department of Health, 2000).

Various pharmacological interventions for smoking cessation have been introduced in recent years (Cofta-Woerpel et al, 2006; Wu et al, 2006; Stead et al, 2008 [ii]; Simon et al, 2004; McEwen et al, 2006). The types of pharmacotherapy available to male smokers in the Kingdom of Saudi Arabia are firstly nicotine replacement therapies such as transdermal

patches or chewing gums or, less frequently, nasal sprays, aerosol inhalers and lozenges (though these are not available in every Primary Health Care Centre). A second type is anxiolytic medications: these control and eliminate the anxiety symptoms which may result during withdrawal. Antidepressants are a third type, but only a few classes are available. Finally, there are different types of pharmaceutical therapies. These include nortriptyline, mecamylamine, clonidine, naltrexone and silver acetate (Al-Doghether, 2004 [ii]).

Nicotine replacement therapy (NRT) is a major intervention for smoking cessation in many developed countries like the US (Fiore et al., 2000) and the UK (West et al, 2000). Following UK guidelines, UK health professionals use NRT or Bupropion for people smoking 10+ cigarettes each day (West et al, 2000; West, 2004). There are concerns regarding the safety of NRT in patients having cardiac problems. However, empirical studies have shown that the nicotine patch is safe in smokers having stable cardiac disease (Fiore et al, 2000; May et al, 2008) or that the advantages of the use of NRT outweigh the risks for such patients (Apelberg et al, 2010). In Saudi Arabia, male smokers are treated with several different forms of nicotine replacement therapy: chewing gum (dosages: 2 mg and 4 mg); transdermal patches (dosage: 16-hr and 24-hr); inhalers; nasal sprays and/or sublingual pills and lozenges (Al-Doghether, 2004 [ii]).

Nicotine chewing gum and transdermal patches are the most frequently recommended types of nicotine replacement therapy in the Kingdom. These are available in 2 mg and 4 mg preparations and are sold without a prescription from physicians. Saudi male smokers use transdermal patches in many sizes. The patches produce nicotine between 7-mg and 22-mg during 24-hours. The intervention produces plasma levels that are the same as the trough levels observed in heavy smokers (Al-Doghether, 2004 [ii]).

The use of nicotine gum, nicotine transdermal patches, nicotine nasal sprays, nicotine inhalers and nicotine sublingual tablets/lozenges have effectively raised quit rates, measuring abstinence after at least 6 months of follow-up. Analysing the results of 132 trials, Stead et al (2008 [ii]) found that nicotine replacement therapies increase the rate of quitting by 50-70%. Effective results have been achieved by combining different NRT interventions (Ebbert et al, 2010; Smith et al, 2009). The use of nicotine patches and inhalers show a 25% abstinence rate at 6 months and 19.5% at 12 months. This is a higher rate than placebo patches and inhalers that, according to some research, result in 22.5 % abstinence at 6 months and 14 % at

12 months (Bohadana, 2000). Bupropion is sometimes used with a nicotine patch to make it more effective than a nicotine patch alone (Jorenby et al, 1999).

In current practice, nicotine replacement therapy is available with strengths of 7-mg, 14-mg and 21-mg in the form of a transdermal patch. However, in Saudi Arabia, the government must review and address the barriers to access it by following other examples (Al-Doghether, 2004, [ii]). The UK is making NRT available across a wide range of retail outlets and settings and not restricting it to pharmacies only (Bauld et al, 2005). The establishment of wider distribution outlets for NRT is essential to make therapy as easily available to smokers as cigarettes themselves (Thorndike et al, 2002; Bauld et al, 2005). It should be readily accessible to Saudi smokers who want to quit.

The Saudi government did not subsidize the cost of NRT for consumers, as is the practice in the UK (Al-Doghether, 2004 [ii]). Male smokers using a transdermal patch for 10 weeks (a standard course) incurred an almost equal cost during this time as they would purchasing cigarettes. Subsidized NRT will reduce the cost and may increase the use of NRT (Bertram et al, 2007). This finding is supported by a study among the Arabic-speaking community in Australia (Poder et al, 2005). It is suggested that reduced out-of-pocket costs for NRT increase not only the use of NRT therapy but also cessation rates (Hopkins et al, 2001). A further consideration, given the proven effectiveness of clinical trials in the USA, is for NRT subsidy to be accompanied by subsidised pharmacy counselling on smoking cessation (Doescher et al, 2002). The current situation with the availability and cost of pharmacological treatments in Saudi Arabia is summarised in Table 1.8.

2.14. Monitoring of patients

Independent assessment of smoking status is possible by using carbon monoxide (CO) meters. CO is produced along with approximately 4,000 other chemicals when cigarettes burn or combust (Bittoun, 2008). CO meters measure expired breath CO (and by calculation the percentage of blood haemoglobin bound to CO molecules) in an easy and non-invasive way (Jarvis et al, 1980). High concentrations are fatal. Feedback of carbon monoxide concentrations may enhance the efficacy of advice from a physician to stop smoking (Jarvis et al, 1986). They are also a potential teaching tool to disabuse patients of the idea that smoking ‘light’ or ‘mild’ tobacco or waterpipes are a safer or healthier option for them. West and Russell (1985) maintain that expired CO measurements are a valuable clinical tool in

judging severity of dependence and likelihood of cravings during abstinence. Metering is an inexpensive and easy to understand measurement of current smoking and thus CO meters are an essential piece of equipment in treatment centres and smoking cessation clinics (Bittoun, 2008).

2.15. Conclusion

The research problem results from a dilemma - the decline in smoking prevalence in many Western countries and its increase in Saudi Arabia. The literature review considered the (admittedly limited) evidence for this phenomenon, and it confirmed that a similar range of policies to control tobacco use were in place internationally. Researching various measures, from tax and price increases, laws on where tobacco could be bought and smoked, labelling of tobacco products and treatment services, the literature suggested that such measures were effective in reducing tobacco use in many societies.

The literature review assisted, firstly, in the formulation of the research aims and objectives. As noted in Chapter 1, these were drafted in a preliminary form prior to undertaking the review, without which no search strategy could have been developed as outlined in Chapter 2. In terms of the first objective, the bulletins and reports produced by the Ministry of Health and the Central Statistics Office in Saudi Arabia were a useful supplement to the Report of the TCP, in outlining the extent of the activities carried out in the Kingdom to control and reduce tobacco use. This provided a link with the questionnaires, which enquired into the views of stakeholders on the extent to which the measures were, in fact, being implemented and the activities carried out. Several articles, most notably those by Al-Doghether (2004), provided insights into the services offered in the Saudi smoking cessation clinics. Regional and international comparisons revealed, through the literature review, that the efforts to curb tobacco use in Saudi Arabia are based on an almost universally accepted framework. Exception had to be made in the case of Makkah and Madinah, where tobacco control measures on paper exceed the laws and practices imposed in other countries.

While the first objective incorporated aspects of the law, of policy and of treatment in relation to tobacco control, the second objective dealt with the question of a second role to be pursued at governmental level, at the level of the TCP and at the level of the smoking cessation clinics themselves. This role is the task of raising awareness in the whole community of the dangers of smoking. The literature review gave an overview of two aspects of this task: the

justification for the messages delivered and, secondly, the means of delivery – from mass media campaigns to advice from health workers to their patients. The literature review investigated the specific social and cultural context in which these messages are promoted in Saudi Arabia, noting national and regional characteristics that differ from some other countries which pursue similar policies of tobacco control – religion, waterpipe smoking and gender differences in tobacco use.

Thus, to meet the second objective, the views of respondents in the surveys had a basis in the two aspects which emerged from the literature review – the content of the messages themselves which were given by the smoking cessation clinics, and their perceptions of the effectiveness with which those messages were relayed to persuade smokers to quit or non-smokers not to take up the habit.

In relation to the third objective, the literature review included an investigation on the availability of certain resources in the Riyadh clinics for pharmacological treatment such as NRT. More generally, literature was consulted on the monitoring of patients and on the significance of combining pharmacological and behavioural treatments. All of these involve added expenditure of time or money or both. Reference was made to links between monitoring, raising awareness of the dangers of smoking and increasing self-efficacy in modifying smoking habits. The questionnaires also included statements which derived from the literature on health behaviour. These statements focused on the difficulties of changing the health behaviour of patients attending the clinics, and health professionals were asked to express their view on the importance of this behavioural aspect in the treatment of patients.

The literature review was thus linked to the research question and the research objectives in addition to the formulation of specific questions within the questionnaires. The role of the WHO in defining the necessary measures to reduce smoking prevalence internationally is clear from these literature review chapters.

CHAPTER 3

Research Design and Methodology

This chapter presents a description, discussion and critical analysis of the methods used in the study. Primary data were collected through both questionnaires. The views of respondents reflect their individual subjective experience of one specific aspect of an objective social experience, in this case the functioning of the Tobacco Control Program. I obtained written assurance of the full cooperation of those responsible for the Tobacco Control Program in conducting the research with both clients in the clinics and the health care professionals.

The methodology is outlined in relation to the quantitative research, and the decision to locate the research in the smoking cessation clinics is explained. The pilot study is evaluated in terms of the fitness for purpose in the main study of the survey, particularly in terms of content and validity. The strengths and limitations of the data collection process are discussed and, finally, some issues of ethics and respondent confidentiality are examined and the ethical procedures adopted in the research defended.

3.1. Choice of methodology and the aim and objectives of the thesis

Health research was at one time guided by the 'medical model' and this model remains influential and widely used (Caldwell et al, 2005; Polgar & Thomas, 2000). However, a more holistic approach now influences how health care is conceptualised and how research is conducted (Caldwell et al, 2005). The role and status of health professionals in the smoking cessation clinics in Saudi Arabia, for example, combine elements of counselling, advice, education and prevention as well as more traditional pharmacological treatments. The definition of health research has itself become broader. Green and Thorogood (2004) consider that it includes any study that addresses understandings of human health, health behaviour or health services, whatever the disciplinary starting point.

Research in the field of health is multi-disciplinary and involves a variety of approaches. The range of such research is wide, from concerns with the health needs of a population to aspects of the provision of health services (Bowling, 2002). In the UK, government policy and professional guidance insist that professional practice should be based on evidence (Gomm & Davies, 2000; Pearson & Craig, 2002). As Samet et al (1998) argue, there is a need to study country specific actions and carry out research into tobacco control. On these views alone, some form of appraisal of the TCP ten years after its inception is justified. In the absence of available data on smoking cessation in Saudi Arabia, perceptions of smoking cessation services, by the users and providers, is better than no appraisal at all.

The aim of this study is to produce an original piece of investigative research in the Riyadh region into perceptions of smoking cessation services provided by the TCP. More precisely, the following objectives are addressed by this study:

1. To investigate perceptions of the extent of the health care (smoking cessation) services provided under the TCP for smokers in the Riyadh region.
2. To investigate the perceptions of clients and health care services professionals in the smoking cessation clinics in this region on the effectiveness of the clinics in raising awareness of the dangers of smoking, in order to encourage smokers to quit.
3. To identify the perceived strengths and limitations of health care (smoking cessation) services provided for smokers in the Riyadh region specifically as a platform for developing those strengths in the future.

The research problem could be stated clearly – the increase in tobacco use in Saudi Arabia, despite the creation of the Tobacco Control Program in 2002 (see Chapter 1). This phenomenon was significant and it was clearly an unexplored area. By obtaining the views of a suitably-sized sample of the service-users and service-providers, it was hoped to draw conclusions on how they perceived the effective operation of the TCP based on their experiences. It must be emphasised that this is a study of perceptions of the role of the clinics and satisfaction with their performance of their perceived role. In virtue of the many functions which the smoking cessation clinics in Saudi Arabia are intended to perform under the TCP, the first section of the questionnaires focused on how clients and staff in the clinics perceived these functions. However, these functions can be seen in the light of two basic aims of the TCP – to contribute to an overall policy of encouraging quit attempts and, secondly, to assist smokers who actually make quit attempts. In the Saudi Arabian context, the clinics are expected also to contribute to the aim of the TCP to discourage the initiation of tobacco use through contribution to some of the core demand reduction provisions (see Table 1.10), specifically their educational and awareness-raising roles.

There were different group perspectives that needed to be investigated – clients of the services provided by the TCP and the professional staff who supplied those services. These views had to be obtained and compared or contrasted. The clinics are open to both men and women. There are also both male and female staff among the health professionals working in the clinics. This study is limited to solely male participants, as it would have been considered improper for a male researcher to approach females with a request to complete the

questionnaires. Even within an academic context, such an action would have resulted in embarrassment in the clinics and the real possibility that some female clients might have been reluctant to continue visiting the clinics for treatment. The decision to approach only male clients in the clinics was, therefore, made reluctantly on this basis and this must be acknowledged as a limitation of the research.

From the choice of methods of survey available, the method adopted was that of applied evaluative research (Thompson, 2000) in seeking to assess the views of participants on the effectiveness of the operation of the TCP. An evaluative study is intended to provide data on the success of action programs. Evaluative studies make certain assumptions, although it is acknowledged that *a priori* assumptions should be avoided. First, there must be measurable objectives for the program that can be used as a basis for evaluation. Secondly, there must be methods available in order to measure the results obtained. A limitation of such studies is that there can be no guarantee that participants are representative of a wider potential study population and, for this reason, the validity and reliability of the research instruments had to be tested (Polit & Beck, 2004), as described later in this chapter.

In order to carry out this study, the recommendations of Robson (2002) and Guba and Lincoln (1989) were followed. They also identify evaluative research as an appropriate approach to examine programs or the operation of programs. The results of such research are generally used to prescribe changes to improve a situation (Weiss, 1972), and in the case of this study the results are intended to provide an insight into how the TCP is operating in the Saudi Arabian context. This type of research, according to Guba and Lincoln (1989), has six properties:

1. The evaluation outcomes present the constructions which the participants create in order to make sense of the situation. This study is not, therefore, a real representation of how the TCP is operating.

2. In a value-pluralistic society, we might expect these constructions to differ widely. Conversely, in a society where values are less pluralistic, we should expect constructions to differ little.

3. These constructions are linked to the social and cultural context in which the participants are living their daily lives.

4. These constructions are highly dependent on the involvement of the participants in the situation under investigation.

5. This type of research demands a set of procedures which all interested parties, including participants, agree with.

6. The integrity and privacy of all participants should be scrupulously respected.

One major perspective of evaluation research in health care has been from within a policy program perspective but, as Khakee (2003) has argued, evaluation research is moving away from positivism. In incorporating the voices of clients and professional staff in the discussion of the findings from the questionnaires, an attempt is made to step back from a preoccupation with exercising control, in order to empower those whom the dissertation is attempting to serve (Guba and Lincoln, 1989). The approach in this thesis is not positivist, in assuming the superiority of 'measurable' data, nor in the assumption of any superior perception of the role of the researcher as a detached, neutral observer of facts. The approach is rather to find some indicative perceptions of those in the smoking cessation clinics on how the TCP is seen to be functioning.

This functioning is viewed from two aspects in the questionnaires. In the first place, the questionnaires seek to obtain the views of participants on the functions which the TCP is perceived to be performing in order to promote smoking cessation. The questionnaires are, therefore, not solely intended to measure patient satisfaction. Patient satisfaction in the context of clinical practice improvement is only the second aspect, though a very important one, of the questionnaires. I did not locate an agreed definition of patient satisfaction. The dimensions of patient satisfaction include: caring attitude, technical quality of care, accessibility and convenience, the cost of services, physical environment, availability of care, continuity of care and outcome of care (University of NSW, 2009). The questionnaires seek to incorporate these dimensions.

I chose to use a questionnaire for several reasons. Firstly, a survey was appropriate for the research objectives of the study. The aim of the study was not to infer cause and effect, but to investigate perceptions about the effectiveness of a specific program of smoking cessation interventions (Brink & Wood, 1998). Secondly, information could be collected from a large sample of participants on their views, based on the same questions asked in the same standardised format (Anastasi, 1988).

Quantitative data have features that can be measured and, on first consideration, it may appear that the measurement of opinions (views) would be difficult to quantify. The decision to undertake a survey of some 500 respondents by means of a questionnaire, however, necessitated the collection of data in such a form that this could be converted into numbers. This could only be achieved through a set choice of responses. Through the use of Likert scales, the responses could be counted and the data treated as quantitative (Likert, 1932; Jamieson, 2004). It was decided to use these scales since they are commonly used in research to measure attitudes. They are easy for participants to use, and easy to construct. They have a central tendency bias - respondents avoid extreme categories – and I was particularly concerned that they may have an acquiescence bias - respondents ticking categories that they thought would 'please' the researcher (Lee et al, 2002). In both the pilot study and main study, therefore, I tried to convince participants of the importance to the study of stating their views honestly and that complete anonymity would be afforded.

In this case, a common framework of an agreement scale was followed and each response analysed separately. Individual responses are normally treated as *ordinal data* because, although the response levels do have relative position, we cannot presume that participants perceive the difference between adjacent levels to be equal (a requirement for *interval data*). In practice, many researchers *do* treat Likert scale response data as if it were interval data; however, from a statistical standpoint this can be questionable (Knapp, 1990). For example, there is no way to ensure that participants view the difference between "agree" and "strongly agree" the same as they might view the difference between "agree" and "neutral."

Considering the two psychometric properties, namely reliability and validity, the best number of options for Likert scales is between 4 and 7 (Lozano et al, 2008). The optimum number of response categories was related to the characteristics of the respondents (Chami-Castaldi et al, 2008). More than 7 options would give better psychometric properties, but the scale must not exceed the discriminative capacity of the respondents. I therefore determined on a 5-point scale, as respondents came from varying educational backgrounds. The pilot study was an opportunity to try to reduce the possibility of respondent bias. Factors in surveys such as rating-scale length and rating-scale format have been shown to have significant effects on response bias (Bardo & Yeager, 1982; Chami-Castaldi et al, 2008). A longer rating-scale would lower extreme responding (Hui & Triandis, 1989). In the pilot study, I was able to check the views of staff in the clinic on the optimum number of categories they considered to be the most appropriate for patients to complete the survey in a way that would most

effectively capture their views. I also checked verbally with the same staff the anchoring of the scale endpoints (Kilpatrick & Cantril, 1960; Nugent, 2004). The staff agreed that they understood the endpoints clearly as referring to either 'totally' or 'not at all'. They thought that patients would understand the same.

The initial decision taken was to limit the survey of smokers to those male clients attending the clinics. Thus, the sampling was to be purposive. These participants would be more likely to contribute informed views than a sample randomly-selected (Oliver, 2004). This decision was made on the basis of the objectives of the research, specifically because service-users and service providers would be more informed on at least Policies 1-4 of the TCP (see Chapter 4.2.1) than a random sample from the general population of smokers and non-smokers. The population of Saudi Arabia is 28 million. It is known from the figures provided by the Saudi Ministry of Health that 18,000 people per year attend the clinics in Riyadh, giving an average of 1,500 clients each month. These clients number both men and women and the proportion of each is not known. If we take as a very conservative estimate that 1,000 males attend the clinics on average every month, then a sample size of 500 (with an anticipated response rate of 400 questionnaires) should provide a sampling error of less than 5% (de Vaus, 2002). Of course, the preference for a large sample must be weighed against factors of time, cost and effort on the part of the researcher. The high response rate was expected due to the adoption of convenience sampling (Draugalis & Plaza, 2009).

The accuracy of a sample is not simply the result of its size (Oppenheim, 1992). In the case of clients, these were already attending the clinics in Riyadh, although the clients were of varying ages, different occupational and educational backgrounds and (in a few cases) of non-Saudi nationality. On the other hand, the questionnaire did not seek primarily to discover causal relationships between sub-groups and the responses obtained, and only the most obvious connections between any of the above factors and a particular set of responses obtained were noted in the study. Even for simple random sampling, where a 50/50 per cent split could be a possibility in giving a particular response, tables indicate an acceptable sample size of 400 to yield no more than a 5% sampling error at a 95% level of confidence (de Vaus, 2002).

3.2. The design of the questionnaires

When devising a questionnaire it is important to know that it might be the single chance to interface with the information providers (Hair et al, 1995). The information that I sought to acquire was based on the aims and objectives of the research. These determined the design of the questionnaire (Saunders et al., 2009). Since this information had never previously been obtained in the Saudi national context, no previous Saudi questionnaire could be used as a basis for determining the sections or drawing up the statements in the questionnaires that were finally decided upon. However, this approach had the limitation of ignoring the wider international context in which the TCP operates. This context, within the overall framework of the WHO FCTC, has already been emphasised in Chapter 1, so the design of questionnaires based on surveys in other countries could and should have been considered. Although Section A of the questionnaires refers to the particularly wide role of the smoking cessation clinics in Saudi Arabia, the experience of the UK could have been followed in designing a similar survey for this research. I have already noted this in Chapter 2.9. The failure to incorporate this into my research design must be considered, therefore, as a limitation of the dissertation.

The goals and policies stated in the Report of the TCP itself indicate how the Program is intended to work. These goals and policies could not be ignored in, firstly, establishing the aim and objectives of the present research and, secondly, in drawing up the sections and statements in the questionnaires for the service-users and service-providers in the clinics. The survey questions deal firstly with the role of the clinics within the TCP in raising awareness of the dangers of smoking and encouraging cessation. The next section refers to treatment programs in the smoking cessation clinics and how effectively they are seen to be providing services. The third section investigates the views of participants on the difficulties which affect this provision and a fourth section deals with perceptions on how the role of the clinics could be developed within the TCP. In the survey of clients, a final section investigates their views on how the services provided under the TCP have affected their motivation to quit.

The TCP was established in 2002. It produced a Public Report in 2009. No studies have attempted to evaluate its operation or contribution to the efforts to combat smoking in Saudi

Arabia. The approaches were determined by this task. The 2009 Report states that the TCP has 4 goals to promote smoking cessation:

1. To protect society against the smoking epidemic, particularly the youth.
2. To help smokers to quit.
3. To protect non-smokers from second-hand smoke, especially children
4. To activate the role of research, rehabilitation and training in the fight against smoking.

In order to achieve these goals, the TCP has adopted 6 Policies:

1. Monitoring tobacco use.
2. Protecting people from the effects of tobacco smoke.
3. Offering help to quit.
4. Warning of the dangers of tobacco.
5. Banning tobacco advertising, promotion and sponsorship.
6. Increasing taxes on tobacco.

These 6 Policies are to be implemented through a series of activities (initiatives) also outlined in the Report, where they are specified in more detail:

1. Raising awareness of people on the hazards of tobacco use and promoting cessation of its use.
2. Training of all the service providers who work within or with the TCP.
3. Reception of smokers in special clinics with specific responsibilities.
4. Regulations on tobacco control.
5. Following up the implementation of the provisions of the WHO Framework Convention on Tobacco Control (FCTC).

It was on the basis of these activities that the statements in the questionnaire were formulated. An investigation of the views of stakeholders in the clinics, those with some knowledge of the TCP and its day-to-day operation, would give a service-user and a service-provider perspective on the research question.

3.3. Pilot study

The pilot study was carried out at an anti-smoking clinic in the Riyadh area operated by a charitable organization. I wished to conduct this pilot study at a clinic in the same geographical location as I proposed for my main study, and to test the questionnaire in a clinic which performed many of the same functions as the clinics established by the TCP.

The pilot questionnaire was distributed among a sample of the study community who attended the clinics over a one-month period. This was satisfactory in terms of the time taken in distributing the questionnaires, retrieval rates of questionnaires fully completed were high, the content validity was tested and the reliability of the results calculated (measured by Cronbach's alpha value > 0.7: 70%) for both clients and workers. The results were positive for the feasibility of the full study. The pilot sample size was 45 clients and 24 workers in the clinics. This followed the general "rule of thumb" advocated by Browne (1995) of taking a group of 30 patients to estimate a parameter.

First, a consent form and later the questionnaire were distributed to a sample of the study community composed of participants from diverse social groups, in order to test the extent of their understanding of the terms and expressions used (Walliman, 2006). As a result, some words were modified and some elements rephrased to make it more easily understandable. Two stages of pilot testing questions were applied. First, I evaluated how respondents interpreted the meaning of each question and checked whether the range of response alternatives was sufficient. In this phase, the respondents were informed that the questions were being developed and that they were being asked in order to help to improve them. The pilot study was, therefore, a declared or participating pretest (de Vaus, 2002). Secondly, from the information gained in the first stage, I revised the wording of the questions, re-ordered questions and ensured that the final layout was clear to respondents.

It was important that the pilot study should be conducted with people who resembled those to whom the questionnaire would finally be given (de Vaus, 2002). Participants in an external pilot should not later be included in the main study to make savings in recruitment, because

then the decision to proceed with the main study would not be made independently of the results of the pilot study (Ross et al, 1999). Following the recommendations of Kelley et al (2003), assessment had to be made of three specific aspects of the pilot questionnaire. Firstly, did the transition from statement to statement and section to section present any difficulties for respondents? Secondly, did respondents skip any particular questions, which might suggest that they found them confusing or irrelevant? Thirdly, did they take too long to complete it, resulting in the final point – did they lose interest and become bored as a result? Bored respondents will provide unconsidered and unreliable answers.

A small number of minor changes to avoid any ambiguity in the wording in Arabic were made. It was not found necessary to alter the ordering of the questions or the length of the questionnaire. I was able to conduct the pilot study and gather the required data and analyse it in a 20-day period, which could be applied to the main study, which was predicted to be completed within 40 days, based on the time that was needed for the pilot study.

Following the construction of the elements that formed the structure of the questionnaire, it was shown to academic specialists in the field in Saudi Arabia for review. The first concern was that the survey would provide the information required (Malhotra, 2004), so the full range of activities of the TCP had to be incorporated into the survey statements. A number of steps were taken to improve the internal validity of the questionnaires.

Internal validity is affected by survey design, since it depends on asking questions that measure what we are supposed to be measuring. This was relatively straightforward in asking what services were actually being provided under the TCP. However, for instance, in Sections B,C,D and E of the client questionnaires, clients were likely to interpret some statements in different ways. To take just one example, Section B, Statement B15 refers to a 'high degree of privacy' afforded to clients. This would obviously be interpreted according to the individual criteria of each respondent. In this case, in the pilot study, I looked at the responses in terms of whether clients were satisfied with the degree of privacy afforded. If most clients generally perceived this as 'high', then this vital aspect of the service was functioning – in their view as service-users – in a satisfactory way.

Reliability in the survey design concerned the consistency of my measurements. Organisational data are commonly collected by surveying informants about the organisations with which they are familiar. This is true for both factual and subjective information (Marsden et al, 2006). Again, the pilot study provided an opportunity to consider this. I

therefore constructed different statements which measured the same characteristics. With reference again to the survey of clients, Statement C24 measured the problem of insufficient staff in the clinics to provide the best possible treatment. In Section D of the questionnaire, Statements D31 and D33 referred to the need for more staff and for more clinics. If clients thought there were insufficient staff, they would suggest the need for increasing both the number of staff and the number of clinics.

I administered the questionnaire to pilot participants in exactly the same way as it would be administered in the main study. I asked the participants for feedback to identify ambiguities and difficult questions. The first reactions that I noted were related to face validity, and participants reported that the questions were phrased appropriately and that the options for responding were clear. I recorded the time taken to complete the questionnaire to decide if this was reasonable. I checked that all questions were answered and discarded any unnecessary or ambiguous questions (Peat et al, 2002: van Teijlingen & Hundley, 2001).

The setting used to recruit participants was identical to that used in the main study. Clients frequently have to wait a considerable time in the clinics in order to see the nurse or doctor. I was, therefore, able to approach individual patients to introduce myself and ask for their assistance in completing the questionnaire. Once I had a small group of prospective participants, I was then able to explain to the group the purpose of the survey, to explain how I proposed to administer and collect it and to reassure them of the ethical safeguards for their anonymity. I also answered their questions. I emphasised that they were under no pressure to agree to participate - the same procedure that I followed in the main study.

Some participants completed the questionnaire during their waiting time, while others returned them in a sealed envelope to the reception, where I collected them on my next visit to the clinic. It would have been useful and instructive to analyse the responses separately of clients who completed the questionnaires in the clinics with the responses of those who handed them in to the clinic reception staff later. The advantage of this would have been to check if my presence in the clinic waiting room, as respondents completed the questionnaires, represented any significant element of researcher bias in the results obtained. My failure to do this in the pilot study or the main study was, therefore, an opportunity missed to estimate the extent of bias in the recruitment procedure which I adopted. While this procedure clearly had its advantages in terms of securing a high response rate, I underestimated its potential disadvantages in terms of influencing the responses of clients.

In both the pilot and main study I was able to approach the health professionals working in the clinics to ask for their participation. I collected their completed questionnaires personally in a subsequent visit. On my frequent visits to the clinics, I was able to gain the confidence of the staff, the majority of whom expressed great interest in the research and were pleased to contribute their views. Nevertheless, while I took pains over my personal assurances of complete anonymity and confidentiality, the possibility of bias could not be dismissed. Staff might harbour genuine concerns over issues of their job security, disciplinary measures or promotion prospects if there was any element of distrust which influenced their responses. For this reason, the ethical approach, which I took great pains to explain to both clients and staff, was absolutely critical to my attempt to reduce the impact of bias in the responses.

Response rate for the staff was 88.9 % and the rate for the clients sample was 83.3 %, giving a total response rate of 86.9 %. I tested the internal content validity to ensure that the statements of the questionnaires were appropriate for the research question (Carter & Porter, 2000; Twycross & Shields, 2004). The aim was to ensure that every variable in the study was precisely represented by a set of statements and that these statements were really measured by this variable (Brinberg & McGrath, 1985). Tables 3.1 and 3.2 below give the responses of clients and staff in the pilot study.

Correlation is a measure of the variables in the survey (de Vaus, 2002). In this case, these were ordinal variables, since an ordinal, Likert, scale was used. This was achieved through measuring the relation between each response and that statement to which it belongs. The variation in response was calculated – how many participants reported, for example, 'Disagree' with the fifth statement in the survey. The range of possible values is from -1.0 to +1.0. Numbers less than zero represent a negative relationship between the variables. Conversely, numbers greater than zero represent a positive relationship (Bewick et al, 2003). In order to use correlation with a rating scale, it was necessary to assume that the intervals between the numbers on the scale were of approximately equal intervals, although Likert scales do not, as has been noted, measure equal intervals (Jamieson, 2004).

The statistical significance of a result is the probability that the observed relationship between variables in a sample occurred by pure chance ("luck of the draw"), and that in the population from which the sample was drawn, no such relationship or differences exist (Thompson, 1994). The higher the p-value, the less we can believe that the observed relation between

variables in the sample is a reliable indicator of the relation between the respective variables in the population (Brownlee, 1960).

Table 3.1. Content validity for clients visiting the anti-smoking clinics

Section A: the role of anti-smoking clinics in educating and improving the tendencies of smokers to quit	Correlation level	Statistical significance
Anti-smoking clinics conduct educational activities.	0.28	0.078
Anti-smoking clinics raise community awareness of smoking hazards.	0.574	0.029
Anti-smoking clinics give information to patients about smoking hazards	0.526	0.026
Anti-smoking clinics enhance the positive tendency towards helping smokers to quit smoking.	0.472	0.024
Anti-smoking clinics offer information services free to smokers of different ages.	0.643	0.032
Anti-smoking clinics offer medical checks free to smokers of different ages.	0.565	0.028
Anti-smoking clinics participate with governmental bodies in conducting educational campaigns in schools and communities about smoking hazards.	0.681	0.034
Anti-smoking clinics cooperate with non-governmental bodies in conducting educational campaigns in schools and communities about smoking hazards.	0.85	0.043
I am aware that the anti-smoking clinics issue booklets, pamphlets and posters to achieve their goal of increasing the numbers who want to quit smoking	0.607	0.030
I am aware that anti-smoking clinics issue releases to achieve their goal of increasing the numbers who want to quit smoking	0.837	0.042
I am aware that anti-smoking clinics issue stickers to achieve their goal of increasing the numbers who want to quit smoking.	0.856	0.043
Section B: the degree of efficiency of the services of the anti-smoking clinics		
Anti-smoking clinics give the help needed to provide benefits through qualified staff specialized in this field.	0.747	0.037
Services in the anti-smoking clinics are offered with a high degree of privacy and confidentiality for clients.	0.327	0.062
The treatment programs of anti-smoking clinics care for the medical circumstances and needs of the patient.	0.230	0.012
The treatment programs of anti-smoking clinics care for the financial circumstances and needs of the patient.	0.373	0.019
The treatment programs of anti-smoking clinics care for the psychological circumstances and needs of the patient.	0.640	0.032
Anti-smoking clinics provide enough information on treatment methods and their advantages before implementing them.	0.738	0.037

Section B: the degree of efficiency of the services of the anti-smoking clinics	Correlation level	Statistical significance
Anti-smoking clinics identify the determination of clients to quit smoking by conducting many checks.	0.301	0.015
Staff in anti-smoking clinics deal in a professional way with smokers to make them feel comfortable/ welcome in the clinic.	0.720	0.036
Anti-smoking clinics follow up cases that fail to quit smoking and treat the most important reasons and factors causing the failure in a proper scientific manner.	0.551	0.028
Anti-smoking clinics give the help needed to provide benefits through qualified staff specialized in this field.	0.747	0.037
Section C: difficulties facing those who benefit from the services of the anti-smoking clinics.		
Owing to pressures of work, the professionals in the clinics do not have enough time to provide the best possible treatment for each client.	-0.106	0.065
There is insufficient attention paid to the smoker (the smoker's beliefs and opinions and degree of concern about their health).	0.600	0.030
There is a lack of awareness of the dangers of smoking on the part of the smoker and his/her family.	0.691	0.035
There is a lack of means of transportation at anti-smoking clinics to help them in educational campaigns and field visits.	0.486	0.024
There is a lack of many important devices used in treating the smoker, such as the carbon monoxide measuring device and the cardiograph device.	0.271	0.014
There is a lack of support equipment in the clinics for educating clients, such as TV, video and the computer.	0.420	0.021
Section D: suggestions for developing the role of the Tobacco Control Programme		
Continue to educate all the community in order to convey a permanent message that smoking is a danger to physical and mental health.	0.607	0.030
Increase the number of qualified and trained workers in the clinics.	0.595	0.030
Hold professional development courses for workers in these clinics to provide up-to-date training.	0.448	0.022
Increase the number of these clinics.	0.728	0.036
Provide the latest anti-addiction forms of treatment.	0.789	0.039
Government help for the clinics by providing the medical equipment they need.	0.811	0.041
Prohibit all promotion of tobacco.	0.833	0.042
Increase the taxes on tobacco companies, forcing them to raise tobacco prices.	0.533	0.027

Section D: suggestions for developing the role of the Tobacco Control Programme	Correlation level	Statistical significance
Force these companies to state the dangers of smoking on their packets.	0.441	0.022
Section E: motivation to stop smoking		
The anti-smoking clinics strengthen the motivation of the client to quit.	0.841	0.042
The anti-smoking clinics organize workshops and meetings for smokers who successfully quit smoking	0.801	0.040
The clinics provide free help lines.	0.873	0.044
The clinics provide treatment free of charge.	0.863	0.043

With three exceptions, statistical significance was less than the statistically acceptable error (.05). Coefficients of association were high and statistically significant.

Table 3.2. Content validity for the sample of professional staff at the anti-smoking clinics

Section A: the extent of the service	Correlation level	Statistical significance
Anti-smoking clinics implement educational activities about the dangers of smoking.	0.710	0.035
Anti-smoking clinics raise community awareness of the dangers of smoking.	0.446	0.022
Anti-smoking clinics undertake research, rehabilitation and training in the fight to combat smoking.	0.567	0.028
Anti-smoking clinics are accessible to clients who wish to quit.	0.363	0.018
Anti-smoking clinics offer free information for smokers.	0.878	0.044
Section B: the effect of anti-smoking programs and educational programs on quitting smoking		
Anti-smoking clinics seek, in collaboration with stakeholders, to take all possible measures, both preventive and therapeutic, to reduce the prevalence of tobacco use within the community.	0.452	0.023
Anti-smoking clinics spread individual and community awareness on the harms of smoking through means of communication such as TV and the Internet.	0.516	0.026
Anti-smoking clinics follow up cases that fail to quit smoking and address the most important factors leading to that failure using a proper scientific approach.	0.643	0.032
Anti-smoking clinics work on early detection of complications of smoking and send clients to the relevant hospitals to undergo treatment for these.	0.961	0.048

Section B: the effect of anti-smoking programs and educational programs on quitting smoking	Correlation level	Statistical significance
Anti-smoking clinics participate with the governmental institutions near the clinic and in the neighbouring villages in the region in conducting campaigns in schools and communities to raise awareness of the dangers of smoking and publicise the services of the clinics.	0.961	0.048
Anti-smoking clinics participate with the non-governmental institutions near the clinic and in the neighbouring areas in the region in conducting campaigns in schools and communities to raise awareness of the dangers of smoking and publicise the services of the clinics.	0.712	0.035
Convincing the smoker of the importance and the necessity of quitting smoking, and his/her ability to do so given sufficient determination, leads to increasing the chance of quitting smoking.	0.610	0.030
Formation of a confidential data bank on smoking - its evolution, case histories and its consequences, increases the number who quit.	0.748	0.037
Awareness of the concept that smoking is socially unacceptable leads to a growth in the number who quit.	0.530	0.027
Awareness of the concept that smoking constitutes a great danger to the health of the smoker and others around him leads to a growth in the number who quit.	0.627	0.031
Section C: Difficulties facing anti-smoking clinics		
The fact that many smokers are content to continue their habit is one of the most important obstacles facing anti-smoking clinics.	-0.136	0.077
Lack of awareness and understanding of the dangers of smoking on the smoker himself and his family, is among the difficulties facing anti-smoking clinics in persuading smokers to quit.	-0.203	0.060
Lack of full-time doctors and health workers, where some of them have other work in some other institutions, hampers the work of anti-smoking clinics.	0.528	0.026
Lack of means of transportation available for each clinic to assist in awareness campaigns and visits to communities, is one of the difficulties facing anti-smoking clinics.	0.206	0.010
One of the obstacles facing some anti-smoking clinics is a lack of some important devices used in the treatment of the smoker, such as the equipment for measurement of carbon monoxide and the ECG.	0.344	0.017
Anti-smoking clinics lack some devices to help increase awareness within and outside the clinic, such as TV, video and computers.	0.014	0.001
Section D: Suggestions for developing the role of the Tobacco Control Programme		
Continue to raise public awareness of all segments of society and use new methods in order to convey a permanent message that smoking in all its forms and types damages both physical and mental health.	0.249	0.012

Section D: Suggestions for developing the role of the Tobacco Control Programme	Correlation level	Statistical significance
Increase the number of trained and qualified medical staff.	0.541	0.027
Establish specialized courses for staff in the clinics to help them improve their scientific and practical knowledge and to keep them up to date in this field.	-0.195	0.710
Increase the number of specialized clinics.	-0.038	0.082
Assistance by the government in the provision of some necessary medical equipment.	-0.038	0.092
Enact legislation and create effective mechanisms for the implementation of this legislation, such as banning smoking in closed and public places.	0.838	0.002
Prohibit all forms of advertising and promotion of tobacco products.	0.475	0.024
Raise the taxes on tobacco companies, thus increasing tobacco prices.	0.136	0.007
Require tobacco companies to display health warnings on their packaging about the risks of smoking.	0.203	0.010

From the above table it is clear that statistical significance, with a few exceptions, was smaller than the statistically acceptable error (.05) which implies that coefficients of association are high and statistically significant.

A test of internal consistency was applied to the responses of the participants to the statements in the questionnaire.

Table 3.3. The results of the internal consistency test for the sample of clients visiting the anti-smoking clinics and the sample of professional health care staff in the clinics

Clients sample			Health care staff sample		
(No. of Items)	(Cronbach's Alpha)	Sections	(No. of Items)	(Cronbach's Alpha)	Sections
42	93.7 %	All sections	30	70.6 %	All sections
13	91.4 %	Section A	5	70.3 %	Section A
10	80.0 %	Section B	10	89.3 %	Section B
6	82.5 %	Section C	15	69.2 %	Section C
13	93.1 %	Section D			

Cronbach's alpha was selected as appropriate for measuring internal consistency, based on a single set of questions administered on a single occasion that can be used for testing weighted or unweighted scales (Cronbach, 1970). It can range from zero (if no variance in survey response is consistent) to one (if all variance is consistent). From the above table it is clear that the values of Cronbach's Alpha for all of the questionnaire sections and statements were greater than 60 % for the questionnaire as a whole. The clients sample was 93.7% and the health care staff sample was 70.6 %, which indicates that those results may be regarded as reliable.

3.4. The main study

In the case of the main study, the collection of the primary data from the questionnaires was carried out in Riyadh, Saudi Arabia, between March and May 2011. A total of 500 questionnaires were distributed to clients attending the clinics, of which 420 were completed – a satisfactory response rate of 84%. Questionnaires were also distributed to all the permanent male staff in the clinics. Out of a total of 30, 25 completed questionnaires were recovered – again, a satisfactory rate of 83%. The data obtained was stored securely in a locked cabinet in my private office to ensure the confidentiality that had been agreed.

Firstly, the study population had to be identified. This population had to be accessible and its views had to be relevant to the aims and objectives of this study. The study population had also to be male, as discussed in Chapter 3.1. The survey population was narrowed down to the male clients and professionals associated with the anti-smoking clinics in the Riyadh region, since these had direct experience of the smoking cessation program. I considered it important to seek the views of both groups of stakeholders – clients and health care staff – in the clinics. This would give the view of both patient and treatment-provider on the effectiveness of the TCP as they experienced it.

The location of the study – the clinics in Riyadh – was determined by practical time constraints which forced the setting of necessary parameters. The list of clinics throughout the Kingdom which appear in the Report of the TCP show that these have been established in all areas of the country. However, expanding the geographical representativeness of the survey would only have been possible if the time available for administering it had been extended by a further two to three months.

In order to ensure that the data obtained might legitimately be generalised for Riyadh, I decided to administer the questionnaires in all 7 clinics in the city. I also decided to collect demographic data on the respondents as to age, educational level, occupation and nationality in order to check that a broad cross-section of clients completed the survey, comparable to national demographics. The Riyadh clinics are located in neighbourhoods that are far apart and in areas of the capital with differing proportions of Saudi and non-Saudi nationals. A further reason for the restriction of the survey to the clinics in Riyadh resulted from the decision to conduct the Pilot Study at one of the clinics operated by the Saudi Smoking Control Charitable Society in Riyadh. As a result of this decision, I was able to broaden my network of personal contacts in the capital. This helped to remove any suspicions or doubts as to the purpose of my research among those responsible for managing the smoking cessation clinics run by the Ministry of Health and to establish a sense of mutual trust. Consequently, I was assured that I would be given the full cooperation of the staff working in these clinics and that facilities would be made available. Assurances were also given that I would be able to approach staff in the clinics to see if they would be willing to complete the questionnaires which I had drawn up, to obtain their views on the TCP.

The longer that each clinic has been established, the more it has become part of the normal social landscape of that particular district and, thus, its greater social acceptability as a health care facility where attendance is not stigmatised or viewed with any marked disapproval. Rich Gulf countries such as Saudi Arabia have established systems of Primary Health Care Centres (PHCCs) serving defined catchment areas, where comprehensive first contact care services are offered to all eligible individuals (Al-Doghaither & Saeed, 2000). The concept of community health services is therefore one within which the smoking cessation clinics was able to be adapted comfortably.

A very useful extension of the study would have been to analyse and compare the responses of clients in each individual clinic. This might have revealed differences in the responses according to the different districts, with catchment areas of varied social and ethnic composition as well as average income levels. I considered collating this data for each individual clinic, but this would have involved an unjustified extension, given that my research did not focus primarily on socio-cultural or socio-economic factors in smoking cessation in the Kingdom.

3.4.1. Conduct of the survey

Convenience sampling is a form of non-probability sampling based on using what is immediately available, in this case through the presence of the researcher handing out and explaining the consent forms to clients who entered the clinics and requesting their participation in the study. The drawback is that there is no way of determining if this sample is in any way representative (Cochran, 1977; Freedman et al, 1998). However, as noted in Chapter 3.2, the study has obtained information from a sample of the population which is likely to know most about the subject (Walliman, 2006). To ascertain external validity, therefore, it was only necessary that the sample should be representative of smokers attending the smoking cessation clinics.

Those clients who attended the clinics had already demonstrated a level of commitment to quitting their smoking habit. In the questionnaire, this is referred to in Section A as a *positive tendency*. They had first-hand knowledge of at least some of the treatment programs offered and a more informed understanding of the role of the clinics than would exist among a non-smoking or general smoking population with no personal experience of seeking such help to quit. While the educational role of both the TCP and the clinics is aimed at *all* the population, the establishment of the clinics was based on the action paradigm that relies on treatment for those people prepared to seek active help to quit smoking (Prochaska & Velicer, 2004). A complete month was allocated for the conduct of the questionnaire. If this proved impractical, a further month was set aside to complete the distribution and collection. The limitations of gender and region are acknowledged, together with implications that these have for the findings (Bassiony, 2009).

The specific type of fixed design is cross-sectional, characterised by the collection of data from a large number of respondents at a single point in time. Closed format questions were chosen as being quick to answer, requiring no special writing skills from respondents and would be easy to code in later analysis. Five alternatives were chosen, in order to give a middle value. The use of numerical rating scales (Likert scales) was decided upon as the most appropriate approach for measuring perceptions. The features of particular importance in the use of Likert scales for this study were (i) that they require respondents to give a single response to each item (ii) that they produce variables where the responses can be ordered from high to low (iii) that in analysis of the data, each statement to which an answer is sought is a separate variable, independent of all the other items in the set (de Vaus, 2002).

The grades are as follows:

1 = fully disagree

2 = disagree

3 = neutral

4 = agree

5 = fully agree

The mathematical average of the sample answers was used as follows:

- The mathematical average from 1 to less than 1.8 means fully disagree.
- The mathematical average from 1.9 to less than 2.6 means disagree.
- The mathematical average from 2.7 to less than 3.4 means neutral.
- The mathematical average from 3.5 to 4.2 means agree.
- The mathematical average from 4.3 to 5 means fully agree.

The variables, measured by Likert scale, are non-manipulable and patterns of association between variables were examined in order to detect associations. Sections A, B, D and E of this questionnaire asked clients to respond to positive statements on the role and performance of the clinics. However, the opposite was the case in Section C, difficulties faced by those attending the clinics, asked clients to respond to negative statements.

The collection of primary data through the questionnaire administered to clients attending the clinics was also intended to contribute towards meeting the third objective of the study. Sections A and E relate to the perceptions of the role of the health care services provided by the clinics. Sections B, C and D deal more specifically with the perceived strengths and limitations of those services.

Initially, the questionnaire asked for details on age, educational level, occupation and nationality of respondents, however the intention was not to obtain a stratified sample (Groves et al, 2004). By varying the days and times on which clients were approached to assist in the survey, it was planned to avoid lack of representativeness in favour of any one age, occupational or nationality group. The information obtained in this personal information

section was intended as a check that no such lack of representativeness had occurred. Had this been the case, some weighting of the sample would have been necessary (de Vaus, 2002).

The main body of the questionnaire consists of four sections, which relate not only to the research objectives, as noted above, but also to the Six Policies of the TCP, laid out most recently in its 2009 Report. Firstly, the study itself is intended as a contribution to Policy 1 – monitoring tobacco use and prevention policies. Statements in Section A of the client questionnaire relate to the aim of Policy 2 – protecting people from the effects of tobacco smoke. Policy 3 deals with offering help to quit and Sections B, C and E are all relevant to this, being one of the principal functions of the clinics. Warning of the dangers of tobacco use is Policy 4 and Section A of the questionnaire is relevant in seeing how clients view the effectiveness of the clinics in achieving this. Policies 5 and 6 are concerned with tobacco advertising and taxation policies, covered in Section D of the questionnaire.

3.4.2. The data collection process evaluated

In this section, the process of collecting data from primary sources is briefly reviewed in terms of its strengths and limitations. It can be a useful strategy to look back at aspects of the research design to evaluate whether the choice of methodology was appropriate to the aims of the thesis (Oliver, 2004). The more important aspects are considered below.

The choice of Riyadh as a location for the distribution and collection of the questionnaires as well as for the conduct of the interviews was initially decided upon as being the most convenient arrangement.

Although it was hoped to achieve some spread of responses by conducting the surveys at different clinics, nevertheless the study could not claim to represent the views of clients and staff at a national level and it must be recognized that there are distinct variations in different parts of Saudi Arabia (Jarallah et al, 1999). Regional and local customs vary according to such factors as historical isolation or the spread of Western influences. Economic circumstances vary also, where regions of relative economic prosperity based on oil extraction and foreign investment contrast with those where a more traditional way of life remains the norm.

The decision to base the statements and questions used in the questionnaires on the aims and policies of the Tobacco Control Program appeared to be a useful approach to evaluating perceptions of how effectively the Program was achieving its mission. The statistical data that exists for the extent of tobacco smoking in the country and of attempts to quit is partial, piecemeal and extremely variable in terms of how that data was collected. Therefore, the approach of seeking the views of those who used, and those who worked in, the clinics was useful to obtain valuable feedback on how the clinics were operating in particular, and how the Program as a whole was seen to be working.

Limiting the population of the study to Riyadh aided greatly in the arrangements to collect the data. Regular and frequent personal visits to each of the clinics enabled the process of monitoring the return of questionnaires to be expedited. With the cooperation of administrative staff in the clinics, individual participants were reminded to complete the questionnaire fully and before a set deadline and, in this way, an adequate number of responses were obtained as planned and as predicted from the pilot study.

3.4.3. Ethical issues and respondent privacy

A number of ethical points must be noted. These should be regarded as limitations of the study. Despite the fact that participants signed an ethical consent form (included in Appendix 5), there were undoubtedly different pressures and constraints on clients and staff. However, prior ethical consent forms were distributed to clients and staff in the clinics together with an information sheet (in Appendices 1-4), outlining full details of the reasons for the research and how it would be conducted. Any person who declined to participate was able to do so at this point without prejudice. Only those who had agreed to participate were later given a questionnaire to complete. It was made clear at this stage that they were free to withdraw from the survey process at any point.

The ethical principles adopted followed the widely accepted principles for biomedical ethics set out by Beauchamp and Childress (2001) and Beauchamp (2003). Autonomy was observed in that all those approached were free to decide for themselves, without control by others, whether to take part. Full information was given with the consent forms to enable them to weigh the potential benefits of the research against any perceived potential risks (confidentiality affecting either treatment (clients) or work relationships (staff). Freedom to

make this utility decision incorporated the principles of beneficence and non-malfeasance (Lawrence, 2007).

Full privacy and confidentiality was an important concern. To ensure this, and following the long established principle of informed consent, I fully explained all contact methods, the research goal and the research processes to participants. This was done face to face when the questionnaires were being distributed and a standardised information sheet about the research was handed out at the same time. The aim was to ensure that all participants received the same information (Oliver, 2004). Respondents could, of course, ask further questions, but at least this approach gave standard information to everyone. I assured participants that the findings were confidential and that no data from any participant would be identified with his/her name.

The participants were asked to complete the questionnaire accurately and objectively within a stated time frame. It was essential to present to all participants a clear account of the need for the study and its potential benefit for themselves and others in order to establish trust. I made clear to the participants in the study that their answers would be treated with complete confidentiality.

In line with the conditions laid out in the UK Data Protection Act, individuals were protected from having data stored without their knowledge and consent. The rights of access (limited to myself and my supervisor) and security of storage were explained. For the sake of greater confidentiality of the subject's information, I removed and replaced all of the respondent's identifiable information with identification numbers. A master file was created linking numbers to names (Babbie & Mouton, 2001). I had exclusive control over all of the information provided by respondents and, once the study is completed, the records are to be destroyed within 5 years in accordance with the policy of the University of Huddersfield.

Therefore, at all stages, ethical principles for the conduct of the research were adhered to, in compliance with the requirements of the Data Protection Act (1988), the Human Rights Act (1998) and the Freedom of Information Act (2000). In addition, I consulted the Declaration of Helsinki Ethics Guideline (2008) and the Nuremberg Code, Research Ethics Guideline (2005). The School of Human and Health Sciences Research Ethics Panel of the University of Huddersfield approved the measures taken to ensure that the research would be carried out following satisfactory ethical guidelines. This letter is included in Appendix 5.

CHAPTER 4

Results

Survey of Clients

This chapter first outlines the selected characteristics of the study sample which were considered relevant in order to ensure variation in the range of respondents who participated in the surveys. Details of the study sample are given of the clients in the clinics. Then the use of the Likert scale is discussed. The results of the responses of the clients in the clinics to the statements in Sections A, B, C D and E of the questionnaires are reported next. Finally, demographic characteristics of the respondents to Sections A, B, C and D of the questionnaires are given, as a check for any disparities in the results when compared with the overall medians that were obtained when these characteristics were not considered.

4.1. The study sample and selected demographic characteristics

The process was followed, as described in Chapter 3, of distributing the questionnaires in the clinics and of retrieving those that were returned. Two factors may have contributed to the high response rate obtained. Firstly, my presence in the smoking cessation clinics enabled me to secure the cooperation and assistance of the administrative staff. Secondly, I was able to explain to clients the purpose of the research, the confidentiality with which their opinions would be treated and the potential value of their views in helping to improve the service and to contribute to reducing tobacco use in the Kingdom. Clients could then make an informed choice whether they wished to complete the questionnaire. The response rate was 84%: out of 500 questionnaires distributed, 420 were returned.

On their questionnaire forms, clients recorded their educational level, employment details and nationality. The purpose of the study when collecting this information was primarily to ensure that the views obtained in the sample represented a wide range of ages, levels of education, occupations and nationalities. No official records have been collated by the Ministry of Health in Saudi Arabia to enable an overview on the ages of all the clients who attend the clinics. The oldest age for clients who responded to the questionnaire was 55 and the youngest age was 20. The average age calculated for all the 420 respondents was 34.2. It should be recalled that, to date, the most detailed studies have been conducted for a younger age group in the Kingdom. The Global Youth Tobacco Survey (Al-Bedah et al, 2010), produced two comprehensive studies in 2001-2 and 2007, for this age group.

Table 4.1 (below) shows that most of the respondents had attended High School (or had failed to reach this level) or had gained a further education Diploma qualification. A total of 295 clients (70.2%) fell into these categories. The percentage of respondents within the undergraduate level was less than 20.0%, while the postgraduate level (Masters or PhD)

accounted for 11.2%. For the purposes of the study, a range of respondents from all educational backgrounds completed the questionnaires.

It is clear that most of the respondents were employed in the public sector. The number in this category totalled 317 (75.5%). The number of private sector employees who responded was 45 (10.7%), while the number of unemployed was 51 (12.1%). Just seven students were in the sample (1.7%). The majority of respondents were of Saudi nationality (95.2%). Those from other nationalities were just 4.8% of the total. In order to establish the representativeness of the sample, it would have been necessary to access official Saudi statistics on the educational attainment profile, age, employment and nationality of the general population. No statistics in any comparable form are provided by the Ministry of Higher Education on educational attainment. Comparable statistics are also lacking for sectors of employment, although the unemployment rate is recorded as 5% (United Nations, 2008). The age range of the population shows a high proportion of youth: ages 0-14 comprise 43%; 15-64 years are 55% and over 65 just 2%. The proportion of males and females is approximately the same (Saudi Statistics Office, 2009). Saudi nationals are 82% of the population, Yemenis form 10%, other Arab nationalities form 3% and other nationalities comprise the remaining 5% (Central Department of Statistics, 2004).

Table 4.1. Distribution of the sample of clients according to education, employment and nationality (n = 420)

Characteristics		Frequency	Percentage
Educational level	High School or less	131	31.2%
	Diploma	164	39.0%
	BA/BSc	78	18.6%
	Masters or PHD	47	11.2%
Job title	Student	7	1.7%
	Private sector employee	45	10.7%
	Public sector employee	317	75.5%
	Unemployed	51	12.1%
Nationality	Saudi	400	95.2%
	Non-Saudi	20	4.8%

The questionnaire for clients was divided into five sections.

Section A: the role of anti-smoking clinics in educating and improving the tendencies of smokers to quit.

Section B: the extent of effectiveness of the services of the anti-smoking clinics.

Section C: the difficulties faced by those who benefit from the services of the anti-smoking clinics.

Section D: suggestions for developing the role of the anti-smoking clinics.

Section E: motivation to stop smoking.

The dataset was encoded and entered into the computer. To determine the length of the five scale cells (both low and high limits) which are used in the themes of the study, the range was calculated (5-1 = 4), and then divided by the number of cells of the scale to get the proper length of the cell which is (4 / 5 = 0.80). After that this value was added to the least value in the scale (or the beginning of the scale that is a whole one) to determine the maximum limit of this cell, and thus the length of the cells became as follows:

- From 1 to 1.80 represents strongly disagree to each statement depending on axis to be measured.
- From 1.81 to 2.60 represents disagree to each statement depending on axis to be measured.
- From 2.61 to 3.40 represents neutral towards each statement different depending on axis to be measured.
- From 3.41 to 4.20 represents agree to each statement depending on axis to be measured.
- From 4.21 to 5.00 represents strongly agree to each statement depending on axis to be measured.

Some statistical methods related to measures of central trends and dispersal were used. The arithmetic mean was used for the answers of the individual study samples on the questionnaires for some study questions, and in detecting the tendencies of the sample individuals concerning their views on the operation of the programs offered by anti-smoking clinics in Riyadh area. It is dependent on a presumptive mean which is the number 3 of the Likert scale, which equals a percentage of 60%, where the arithmetic means are compared for

each variable with this presumptive mean in order to accept or reject the hypothesis. This presumptive mean was achieved by finding the arithmetic mean of the five weights of the (Likert) five-level, as follows: 1+2+3+4+5=15/5=3 (Al-Nahari and Aseraihe, 2003). The standard deviation is a measure that determines the extent of convergence or divergence of the readings from their arithmetic mean. The standard deviation is used to measure and notify the extent of dispersal of the study sample vocabulary answers around their arithmetic mean. The smaller the standard deviation the better, where the small standard deviation value indicates that the dispersal of the answers around the arithmetic mean is small (Clave, 1982). I used a Chi-square test for goodness of fit

In terms of analysing the one-way ANOVA (f-test), my aim was to apply this to test community diversity to find if there were any significant differences which could be observed. This is a set of statistical models, with accompanying procedures for these models, which facilitate comparing means of different statistical communities by dividing the total observed variance between them into different parts (Clave, 1982). So it is a way to test the meaning of the difference between the averages for many samples in one comparison. It is also known as a method of dividing the total differences for a set of experimental notes for many parts to arrive at the source of difference between them. This kind of analysis is used to establish the extent of the difference of the answers of the sample individuals according to their characteristics.

4.2. The questionnaire responses: clients

4.2.1. Section A: the role of the anti-smoking clinics in education and improving the tendencies of smokers to quit. Results.

Objective 1: To investigate the extent of the health care (smoking cessation) services provided under the TCP for smokers in the Riyadh region.

In this section, the answers of the sample were collected and the arithmetic mean of their responses were calculated. The number of statements related to this section was 13, as shown in Table 5.7. The responses obtained were intended to provide an answer in part to Objective 1 of the research.

Table 4.2.

Responses of the sample of clients to the statements in Section A (n = 420)

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
		n	%	n	%	n	%	n	%	n	%			
1	Anti-smoking clinics conduct educational activities	00	00	28	6.7	50	11.9	194	46.2	148	35.2	4.1	0.8	168.5*
2	Anti-smoking clinics raise community awareness of smoking hazards	13	3.1	15	3.6	00	00	236	56.2	156	37.1	4.2	0.8	154.1*
3	Anti-smoking clinics educate patients about smoking hazards	28	6.7	00	00	34	8.1	190	45.2	168	40.0	4.1	1.0	67.5**
4	Anti-smoking clinics strengthen the positive tendency towards helping smokers quit smoking	13	3.1	15	3.6	38	9.0	187	44.5	167	39.8	4.2	0.9	124.7*
5	Anti-smoking clinics offer information services free to smokers of different ages	00	00	43	10.2	46	11.0	163	38.8	168	40.0	4.1	0.9	105.0*
6	Anti-smoking clinics offer medical checks free to smokers of different ages	28	6.7	00	00	54	12.9	208	49.5	130	31.0	4.0	1.0	112.1*
7	Anti-smoking clinics spread community knowledge on the dangers of smoking through modern communication media such as TV and the internet	13	3.1	30	7.1	99	23.6	118	28.1	160	38.1	3.9	1.1	144.5*
8	Anti-smoking clinics participate with governmental bodies in conducting educational campaigns in schools and communities about smoking hazards	28	6.7	00	00	92	21.9	230	54.8	70	16.7	3.8	0.9	72.5*
9	Anti-smoking clinics cooperate with non-governmental bodies in conducting educational campaigns in schools and communities about smoking hazards	28	6.7	15	3.6	83	19.8	203	48.3	91	21.7	3.8	1.0	36.5**
10	I am aware that the anti-smoking clinics issue booklets, pamphlets and posters to achieve their goal of increasing the numbers who want to quit smoking	13	3.1	30	7.1	50	11.9	231	55.0	96	22.9	3.9	0.9	77.8*
11	I am aware that the anti-smoking clinics issue releases to achieve their goal of increasing the numbers who want to quit smoking	13	3.1	30	7.1	74	17.6	222	52.9	81	19.3	3.8	0.9	47.2**

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
12	I am aware that the anti-smoking clinics issue stickers to achieve their goal of increasing the numbers who want to quit smoking	28	6.7	00	00	47	11.2	277	66.0	68	16.2	3.9	0.9	102.0*
13	I am aware that the anti-smoking clinics conduct religious meetings for smokers in order to inform them of the Islamic perspective towards smoking	13	3.1	53	12.6	74	17.6	162	38.6	118	28.1	3.8	1.1	60.2**
Overall mean												3.95	0.97	

* Significant at (0.05) level.
** Significant at (0.01) level.

It is clear from the above table that most of the answers of the respondents were close, and are moving towards approval, as most of the averages of the responses indicate. The least arithmetic average was (3.8) and the highest arithmetic average was (4.20) and are on the track to answer (Agree).

Tracking the values of standard deviations, which were all around 1, we find that most of the answers did not deviate from the arithmetic averages, indicating the consistency of the answers, and agreement of the majority of the sample individuals. The table indicates that the values of (Chi^2) for all statements were statistically significant at the level of (0.05) and (0.01) or less, which shows the variation in views of the client sample for each of these statements.

Through the averages of the sample individuals' answers to the statements in Section A (that relate to the role of the anti-smoking clinics in raising awareness and improving smokers tendencies to quit smoking), one can say that most of the members of the sample agreed that the anti-smoking clinics implement many educational activities. They also work on raising community awareness of the dangers of smoking.

They also agreed that these clinics educate patients about the dangers of smoking, and develop positive attitudes among the smokers visiting anti-smoking clinics to help them quit smoking, and provide information services free of charge for smokers of all ages.

In general, and by calculating the average of arithmetic means (Average mean) which was (3.95), it can be said that members of the sample agreed that anti-smoking clinics perform a

recognised role in improving the awareness and attitudes of smokers towards quitting smoking.

4.2.2. Section B: the extent of the effectiveness of the services provided by the anti-smoking clinics. Results.

Objective 2: To investigate the perceptions of clients and health care services professionals in the Riyadh region on the effectiveness of the clinics in raising awareness of the dangers of smoking, in order to encourage smokers to quit.

In this section, the responses of the clients were collected and the mean of their responses were calculated. There are 10 statements in this section, as illustrated in Table 4.3.

Table 4.3.

Responses of the sample of clients to the statements in Section B (n = 420)

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
		n	%	n	%	n	%	n	%	n	%			
14	Anti-smoking clinics give the help needed to provide benefits through specialized and qualified staff in this field	13	3.1	30	7.1	83	19.8	202	48.1	92	21.9	3.8	0.9	67.6**
15	Services in the anti-smoking clinics are offered with a high level of privacy and confidentiality for clients	28	6.7	00	00	56	13.3	195	46.4	141	33.6	4.0	1.0	72.4**
16	The treatment programs of the anti-smoking clinics consider the medical circumstances and needs of the patient	28	6.7	00	00	86	20.5	256	63.1	41	9.8	3.7	0.9	74.5**
17	The treatment programs of the anti-smoking clinics consider the financial circumstances and needs of the patient	13	3.1	00	00	146	34.8	201	47.9	60	14.3	3.7	0.8	72.7**
18	The treatment programs of the anti-smoking clinics consider the psychological circumstances and needs of the patient	13	3.1	15	3.6	119	28.3	195	46.4	78	18.6	3.8	0.9	71.0**

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
19	Anti-smoking clinics provide enough information on treatment methods and their advantages before implementing them	13	3.1	15	3.6	88	21.0	170	40.5	134	31.9	4.0	0.9	92.9**
20	Anti-smoking clinics are responsible for the behavioural as well as medical treatment of those persons willing to quit smoking	28	6.7	00	00	98	23.3	223	53.1	71	16.9	3.8	0.9	81.8**
21	Anti-smoking clinics identify the determination of clients to quit smoking by conducting many checks	13	3.1	15	3.6	104	24.8	193	46.0	95	22.6	3.8	0.9	113.2**
22	Staff at anti-smoking clinics deal in a professional way with smokers to make them feel comfortable and welcome in the clinic	28	6.7	00	00	68	16.2	228	54.3	96	229	3.9	1.0	90.4**
23	Anti-smoking clinics follow up the cases that fail to quit smoking and treat the most important reasons and factors causing the failure in a proper scientific manner	28	6.7	38	9.0	118	28.1	129	30.7	107	25.5	3.6	1.1	99.6**
Overall mean												3.84	0.93	

* Significant at (0.05) level.
** Significant at (0.01) level.

From the above table it is clear that most of the answers of the respondents did not differ and there was no marked contrast among them, and they are moving towards approval. Most of the averages of the responses indicated that the least arithmetic average was (3.6) and the highest arithmetic average was (4.0) and they are on the track to answer (Agree). The table indicates that the values of (Chi^2) for all statements were statistically significant at the level of (0.01) or less, which shows the variation in views of the client sample for each of these statements.

Through the average of the sample answers to the statements in Section B, which relate to their perceptions of the effectiveness of anti-smoking clinic services for smokers, one can say that most of the respondents in the sample agreed that the effectiveness of these clinics is high. They think that anti-smoking clinics offer the assistance sought by the patient through qualified staff, and the services provided are characterized by a high degree of confidentiality

and privacy for the clients. They consider that the treatment programs offered by the anti-smoking clinics take into account the circumstances and needs of the patient.

They also agreed that the treatment programs offered by the anti-smoking clinics take into account the financial and psychological circumstances and needs of patients, and that these clinics provide behavioural and pharmacological treatment for people who want to quit smoking.

By calculating the averages mean (Average mean) that reached (3.8), it can be said that respondents in the sample considered that there is high effectiveness in the services offered by anti-smoking clinics and centres.

4.2.3. Section C: the difficulties facing the provision of services by the anti-smoking clinics.

Objective 3: To identify the strengths and limitations of health care (smoking cessation) services provided for smokers in the Riyadh region specifically as a platform for developing those strengths in the future.

In this section, there were six statements relating to the difficulties which clients of the services provided by the clinics had experienced. This section was designed specifically so that a response of 'Agree' or 'Strongly Agree' meant that real difficulties did exist for clients attending the clinics. It had been hoped that respondents would not simply go through the whole questionnaire writing similar numbers in each column, without paying much attention or thought to the statement concerned. Thus, it was felt to be important to incorporate some negative statements in the questionnaire, so that the exercise could not be regarded as a form of 'rubber stamping' the activities of the clinics through seeking only positive responses. It was, of course, possible that while opinion may be generally favourable to the work of the clinics and the operation of tobacco control measures, at the same time it could be recognized that many difficulties remained to be overcome.

Table 4.4.

Responses of the sample of clients to the statements in Section C (n = 420)

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
		n	%	n	%	n	%	n	%	n	%			
24	Owing to pressures of work, the staff in the clinics do not have enough time to provide the best possible treatment for each client	00	00	39	9.3	133	31.7	162	38.6	86	20.5	3.7	0.9	170.1**
25	There is insufficient attention paid to the smoker (the smoker's beliefs and opinions and the degree of concern about his/her health)	13	3.1	47	11.2	135	32.1	165	39.3	60	14.3	3.5	1.0	98.8**
26	There is a lack of awareness of the dangers of smoking on the part of the smoker and his/her family	00	00	48	11.4	87	20.7	130	31.0	155	36.9	3.9	1.0	154.0**
27	There is a lack of means of transportation at anti-smoking clinics to help them in their educational campaigns and field visits	00	00	15	3.6	133	31.7	127	30.2	145	34.5	4.0	0.9	74.5**
28	There is a lack of many important devices used in treating the smoker, such as the carbon monoxide measuring device and the cardiograph device	00	00	21	5.0	89	21.2	191	45.5	119	28.3	4.0	0.8	90.1**
29	There is a lack of support equipment in the clinics for educating clients, such as TV, video and the computer	00	00	11	2.6	101	24.0	194	46.2	114	27.1	4.0	0.8	78.9**
Overall mean												3.9	0.9	

* Significant at (0.05) level.
** Significant at (0.01) level.

The above table shows that most of the answers of respondents from the clients of anti-smoking clinics did not differ and there was no marked contrast between them, and they are moving towards approval, as most of the averages of the responses indicate. The least arithmetic average was (3.5) and the highest arithmetic average was (4.0), and both of these tend to answer (Agree). The table indicates that the values of (Chi^2) for all statements were statistically significant at the level of (0.01) or less, which shows the variation in views of the client sample for each of these statements.

From the averages of the answers of the sample to the statements in Section C, which relate to a range of difficulties facing the beneficiaries from the services of anti-smoking clinics, one can say that most of members of the sample thought that there are a range of problems that can be arranged according to the degree of difficulty as follows:

- Lack of transportation and private transportation in anti-smoking clinics to help them in awareness campaigns and field visits. The arithmetic average was (4.0).
- The absence of some important devices needed in the treatment of smokers such as the device used for measurement of carbon monoxide and the ECG. The arithmetic average was (4.0).
- Lack of some devices in anti-smoking clinics to help increase awareness within and outside the clinic, such as: TV, video, and computers. The arithmetic average was (4.0).
- Lack of full awareness and full understanding of the dangers of smoking on the smoker himself and his family. The arithmetic average was (3.9).
- The pressures of work on staff in the anti-smoking clinics, which lead to lack of sufficient time to provide the best possible treatment for each patient. The arithmetic average was (3.7).
- There is insufficient attention paid to the smoker (smoker's beliefs and opinion and perspectives and the degree of concern for his health). The arithmetic average was (3.5).

In general, by calculating the average mean (Average mean), which reached (3.8), it can be said that respondents in the sample agreed that there is a range of difficulties facing the clinics. Highest ranked among these difficulties is the lack of the means of transportation in anti-smoking clinics to help in awareness campaigns and field visits, as well as the absence of some important devices needed for the treatment of the smoker, such as the device used for measurement of carbon monoxide and the ECG.

4.2.4. Section D: suggestions to develop the role of the anti-smoking clinics

Objective 3: To identify the strengths and limitations of health care (smoking cessation) services provided for smokers in the Riyadh region specifically as a platform for developing those strengths in the future.

In this section there were a total of nine statements, which invited clients to express their views on a series of suggestions put forward in the questionnaire for the future development of the work of the clinics.

Table 4.5.

Responses of the sample of the clients to the statements in Section D (n = 420)

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
		n	%	n	%	n	%	n	%	n	%			
30	Continue to educate all the community in order to convey a permanent message that smoking is a danger to physical and mental health	15	3.6	00	00	36	15.0	164	39.0	178	42.4	4.2	1.0	165.2**
31	Increase the number of qualified and trained staff in the clinics	00	00	00	00	47	11.2	87	20.7	286	68.1	4.6	1.0	144.2**
32	Hold professional development courses for staff in the clinics to provide up-to-date training	00	00	00	00	61	14.5	73	17.4	286	68.1	4.5	0.9	157.3**
33	Increase the number of clinics specialized in the fight against smoking	00	00	00	00	15	3.6	139	33.1	266	63.3	4.6	0.8	120.6**
34	Provide the latest anti-addiction forms of treatment.	00	00	00	00	26	6.2	106	25.2	288	68.6	4.6	1.0	90.2**
35	Government assistance for the clinics by providing them with the necessary medical equipment.	00	00	00	00	49	11.7	80	19.0	291	69.3	4.6	0.9	87.9**
36	Prohibit all promotion of tobacco.	00	00	12	2.9	29	6.9	58	13.8	321	76.4	4.6	0.8	132.2**
37	Increase taxes on tobacco companies, forcing them to raise the price of tobacco.	41	9.8	27	6.4	11	2.6	97	23.1	244	58.1	4.1	0.9	133.5**
38	Force the tobacco companies to state the dangers of smoking on their packets.	15	3.6	00	00	50	11.9	103	24.2	252	60.0	4.4	0.8	140.2**
39	The anti-smoking clinics strengthen the motivation of the client to quit.	00	00	00	00	15	3.6	137	32.6	268	63.8	4.6	0.9	178.9**
40	The anti-smoking clinics organise workshops and meetings for smokers who successfully quit smoking.	00	00	00	00	38	9.0	95	22.6	287	68.3	4.6	1.0	175.3**
41	The clinics provide free help phone lines	00	00	00	00	21	5.0	132	31.4	267	63.6	4.6	0.9	174.6**
42	The clinics provide treatment free of charge.	00	00	00	00	00	00	94	22.4	326	77.6	4.8	0.7	100.2**
Overall mean												4.5	0.7	

* Significant at (0.05) level.
** Significant at (0.01) level.

The above table shows that most of the answers of respondents from the clients of anti-smoking clinics, did not differ and there was no marked contrast between them, and they are moving towards strong approval, as most of the averages of the responses indicate. The least arithmetic mean was (4.1) and the highest arithmetic mean was (4.8). They tend to answer (Agree, and Strongly Agree). The table indicates that the values of (Chi^2) for all statements were statistically significant at the level of (0.01) or less, which shows the variation in views of the client sample for each of these statements.

Through the average of the sample answers to the statements in Section D, which relate to the development of the role of anti-smoking clinics, most of them agreed on the set of statements, which are arranged in the order of importance as follows:

- Providing treatment for free; the average was (4.8).
- Increasing numbers of trained and qualified medical staff in the anti-smoking clinics; the arithmetic average was (4.6)
- Increasing the number of specialized clinics in the fight against smoking; the average was (4.6)
- Assistance in providing some modern medical devices needed by these clinics; the average was (4.6).
- Government assistance to the clinics by providing them with the needed medical equipment; the average was (4.6).
- Prevention and prohibition of the promotion of tobacco; the arithmetic average was (4.6)
- Strengthening the smoker's motivation for quitting smoking by anti-smoking clinics; the average was (4.6).
- Organizing workshops and meetings for smokers who successfully quit smoking; the average was (4.6).
- Providing free help phone lines; the average was (4.6)
- Establishing specialized courses for those working in these clinics and inform them of updates in the fight against smoking; the average was (4.5)
- Force the tobacco companies to put pictures of diseases caused by smoking on the packaging of tobacco products; the average was (4.4).
- Continued outreach and education to all segments of society to deliver the message that the scourge of smoking in all its forms and types is the source of the corruption of physical and mental health; the average was (4.2)

- Increasing the taxes on tobacco companies, forcing them to raise the price of tobacco; the arithmetic average was (4.1).

Generally speaking, from calculating the average of arithmetic means, which reached (4.5), it can be said that sample individuals of anti-smoking clinics clients agreed with some statements on measures that could contribute in developing the role of anti-smoking clinic. The following headed the list from this section:

providing free treatment; increasing numbers of trained and qualified medical staff in the anti-smoking clinics; increasing the number of clinics specialized in the fight against smoking; giving assistance to the clinics by providing them with the needed medical equipment.

4.3. Trends in the demographic characteristics of clients

In order to discuss the directions of the sample on the sections of the study by their demographic characteristics, a test of variance was conducted (one way ANOVA), in order to detect differences in in the averages of their responses, and whether these differences are statistically significant.

Section A: the role of the anti-smoking clinics in educating and improving the tendencies of smokers to quit.

Table 4.6.

Test results of (f-test) in a sample of clients responses to statements in Section A

Personal variables	Category	Mean	D.F	Total of squares	f value	Significance level
Educational level	High school or less	3.80	419	10.34	17.66	0.00
	Diploma	4.24				
	BA	3.71				
	Masters or PHD	4.05				
Career	Student	3.61	419	42.67	25.18	0.00
	Private sector employee	4.36				
	Public sector employee	3.94				
	Unemployed	3.65				

Nationality	Saudi	3.89	419	48.35	86.18	0.00
	Non Saudi	4.37				

The following points should be noted from Table 4.6:

1. The presence of statistically significant differences in the answers of respondents in Section A due to the variable 'level of education', shows the value of (f) = 17.66, and the level of significance (0.00) is lower than the statistically acceptable error. These differences tended in favour of the educational level (diploma) where they showed more approval than others within the other educational levels.
2. The presence of statistically significant differences in the answers of respondents due to the variable named 'career', shows the value of (f) = 25.18, and the level of significance (0.00) is lower than the statistically acceptable error. These differences tend in favour of job title (public sector), where they showed more approval than others within the other job titles.

Table 4.7.

Test results of (t-test) in a sample of clients responses to statements in Section A

Personal variables	**Category**	**Mean**	**D.F**	**t value**	**Significance level**
Nationality	Saudi	3.89	419	86.18	0.00
	Non Saudi	4.37			

The presence of statistically significant differences in the answers of respondents due to the variable of 'nationality', shows the value of (t) = 86.18, and the level of significance (0.00) is lower than the statistically acceptable error. These differences tend in favour of non-Saudi nationals, where they showed more approval than Saudi nationals.

Section B: the effectiveness of the services of the anti-smoking clinics

This section of the questionnaire was re-examined next to check that there were no major anomalies in the responses of clients of varying educational levels, job titles and nationality. The results are shown in Table 4.8:

Table 4.8.

Test results of (f-test) in a sample of clients responses to statements in Section B

Personal variables	Category	Mean	D.F	Total of squares	f value	Significance level
Educational level	High school or less	3.79	419	61.00	36.14	0.00
	Diploma	3.99				
	BA	3.46				
	Masters or PhD	3.94				
Career	Student	3.20	419	77.72	25.91	0.00
	Private sector employee	4.37				
	Public sector employee	3.74				
	Unemployed	3.81				
Nationality	Saudi	3.72	419	52.99	93.47	0.00
	Non Saudi	4.23				

The following points should be noted from Table 4.8:

1. The presence of statistically significant differences in the answers of respondents to Section B due to the variable 'level of education', shows the value of (f)= 36.14, and the level of significance = (0.00) is lower than the error acceptable statistically. These differences tend in favour of the members of the educational level (diploma), where they showed more approval than others within the other educational levels.
2. The presence of statistically significant differences in the answers of respondents due to the variable named 'career', shows the value of (f) = 25.91, and the level of significance (0.00) is lower than the statistically acceptable error. These differences tend in favour of the members of the career (public sector), where they showed more approval than others within the other careers.

Table 4.9.

Test results of (t-test) in a sample of clients responses to statements in Section B

Personal variables	Category	Mean	D.F	t value	Significance level
Nationality	Saudi	3.72	419	93.47	0.00
	Non Saudi	4.23			

The presence of statistically significant differences in the answers of respondents due to the variable of 'nationality', shows the value of (t) = 93.47, and the level of significance = (0.00) is lower than the statistically acceptable error. These differences tend in favour of non-Saudi nationals, where they showed more approval than Saudi nationals.

Section C: difficulties facing the beneficiaries of the services of the anti-smoking clinics

Re-examination of Section C checked for any outstanding differences indicated by the responses in terms of demographic characteristics. Results from Sections A and B have so far shown no major differences of view among respondents when their answers have been broken down and quantified, according to the variables of educational level, career and nationality. Table 4.10. shows the results:

Table 4.10.

Test results of (f-test) in a sample of clients responses to statements in Section C.

Personal variables	Category	Arithmetic mean	D.F	Total of squares	f value	Significance level
Educational level	High school or less	3.90	419	77.06	74.54	0.00
	Diploma	4.06				
	BA	3.49				
	Masters or PHD	3.59				
Job title	Student	4.16	419	52.77	48.75	0.00
	Private sector employee	3.50				
	Public sector employee	3.92				
	Unemployed	3.37				

Nationality	Saudi	3.85	419	0.17	0.430	0.51
	Non Saudi	3.82				

The following points should be noted from Table 4.10:

1. The presence of statistically significant differences in the answers of respondents to Section C due to the variable 'level of education', shows the value of (f) = 74.54, and the level of significance (0.00) is lower than the statistically acceptable error. These differences tend in favour of the educational level (diploma), where its members showed more approval than others within the other educational levels.
2. The presence of statistically significant differences in answers of respondents due to the variable named 'career' shows the value of (f) = 48.75, and the level of significance (0.00) is lower than the statistically acceptable error. These differences tend in favour of the members of the job title (public sector), where they showed more approval than others within the other job titles.

Table 4.11.

Test results of (t-test) in a sample of clients responses to statements in Section C

Personal variables	Category	Arithmetic mean	D.F	t value	Significance level
Nationality	Saudi	3.85	419	0.430	0.51
	Non Saudi	3.82			

There are no statistically significant differences in the answers of respondents due to the variable of 'nationality', which shows the value of (t) = 0.430, and the level of significance (0.51) is lower than the statistically acceptable error. The responses of Saudis and non-Saudis show similar results.

Section D: suggestions for developing the role of the anti-smoking clinics

The responses of the clients in this section were in agreement with the statements in the questionnaire. This was broken down according to demographic characteristics to give the results shown in Table 4.12:

Table 4.12.

Test results of (f-test) in a sample of clients responses to statements in Section D

Personal variables	Category	Arithmetic mean	D.F	Total of squares	f value	Significance level
Educational level	High school or less	4.42	419	25.63	8.54	0.00
	Diploma	4.45				
	BA	4.67				
	Masters or PHD	4.81				
Job title (career)	Student	3.61	419	40.50	86.156	0.00
	Private sector employee	4.40				
	Public sector employee	4.56				
	Unemployed	4.55				
Nationality	Saudi	4.46	419	24.47	24.47	0.00
	Non Saudi	4.80				

The following points should be noted from Table 4.12:

1. The presence of statistically significant differences in the answers of respondents in Section D due to the variable 'level of education', shows the value of (f) = 8.54, and the level of significance (0.00) is lower than the statistically acceptable error. These differences tend in favour of the educational level (Masters or PhD), where those members showed more approval than others within the other educational levels.
2. The presence of statistically significant differences in the answers of respondents due to the variable named 'career', shows the value of (f) = 86.156, and the level of significance (0.00) is lower than the statistically acceptable error. These differences tend in favour of the job title (public sector), where the members of that category showed more approval than others within the other job titles.

Table 4.13.

Test results of (t-test) in a sample of clients responses to statements in Section D

Personal variables	Category	Arithmetic mean	D.F	t value	Significance level
Nationality	Saudi	4.46	419	24.47	0.00
	Non Saudi	4.80			

3.

The presence of statistically significant differences in the answers of respondents due to the variable of 'nationality' shows the value of (t) = 24.47, and the level of significance (0.00) is lower than the statistically acceptable error. These differences tend in favour of non-Saudi nationals, where they gave more approval than the Saudi nationals.

CHAPTER 5

Results

Survey of Professional Staff

In the main study, I distributed a total of 30 questionnaires to professional staff working in the smoking cessation clinics in Riyadh. A total of 25 were returned, a response rate of 83%. The information collected from the professional staff in the clinics also related to their educational level and nationality. In addition, they provided information on their job role and their years of experience working in that role in the particular field of smoking cessation. The majority of the sample of staff who participated in the study were male nurses. They comprised 52% of the study sample, compared with doctors and administrative staff who each comprised 20%. Three senior nurses had BSc qualifications and the remaining 10 nurses had an educational level of Diploma or less. Two junior doctors had BSc equivalent qualifications and three had Masters equivalent degrees. Two senior administrators held PhDs. One administrator and the social researcher possessed a BA. Two administrators held High School qualifications. The psychiatrist held a BSc equivalent qualification. Table 5.1 shows the results obtained.

Table 5.1.

Distribution of the sample of staff according to employment, education, experience and nationality

		Frequency	Percentage
Job title	Doctor	5	20.0%
	Nurse	13	52.0%
	Psychiatrist	1	4.0%
	Social researcher	1	4.0%
	Administrative	5	20.0%
Educational level	Diploma or less	13	52%
	BA	7	28%
	Masters	3	12%
	PhD	2	8%
Years of experience	Less than 3 years	2	8%
	From 3-5 years	4	16%
	More than 5 years	19	76%
Nationality	Saudi	20	80%
	Non-Saudi	5	20%

5.1. The questionnaire responses: professional staff

The questionnaire for staff was divided into four sections:

Section A: the extent of services provided from the perspective of the staff.

Section B: the effect of anti-smoking awareness programs on discouraging tobacco use.

Section C: the difficulties facing the anti-smoking clinics.

Section D: suggestions for developing the role of the anti-smoking clinics.

5.1.1. Section A of the questionnaire for professional staff in the clinics: results.

Section A: the extent of the service.

Objective 1: To investigate the extent of the health care (smoking cessation) services provided under the TCP for smokers in the Riyadh region.

In order to compare the results more clearly from Section A of the questionnaire for clients, the results of the questionnaire for Section A for the professional staff in the clinics is now presented. This section contains five statements relating to the goals of the clinics, their role and accessibility for the population of the country. The statements differ in part from those in the client questionnaire, based on their varied experiences as service-providers and service-users of the clinics.

Table 5.2.

Responses of the sample of staff to the statements in Section A (n = 25)

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
		n	%	n	%	n	%	n	%	n	%			
1	Anti-smoking clinics implement educational activities about the dangers of smoking	00	00	00	00	1	4.0	11	44.0	13	52.0	4.5	0.6	125.3**
2	Anti-smoking clinics raise community awareness of the dangers of smoking	00	00	1	4.0	5	20.0	14	56.0	5	20.0	3.9	0.8	122.8**
3	Anti-smoking clinics undertake research, rehabilitation and training in the fight to combat smoking	2	8.0	1	4.0	4	16.0	14	56.0	4	16.0	3.7	1.1	129.8**
4	Anti-smoking clinics try to be accessible to clients who wish to seek help to quit	1	4.0	2	8.0	12	48.0	7	28.0	3	12.0	3.5	1.0	142.5**
5	Anti-smoking clinics offer an information service free of charge for smokers of all ages.	00	00	00	00	7	28.0	9	36.0	9	36.0	4.1	0.8	105.6**
Overall mean												4.0	0.9	

* Significant at (0.05) level.
** Significant at (0.01) level.

It is clear from the preceding table that most of the answers of the sample were close to each other, and moving toward approval, as most of the averages of the responses indicate. The lowest arithmetic average was (3.5) and the highest arithmetic average was (4.5) and are on track to answer (Neutral - Strongly Agree). The table indicates that the values of (Chi^2) for all statements were statistically significant at the level of (0.01) or less, which shows the variation in views of the sample of staff for each of these statements.

Tracking the values of standard deviations, which were all around one, we find that most of the answers did not deviate from the arithmetic mean, indicating the consistency of the answers, and agreement among most of the sample members. Through the average of the answers of the sample to the statements in Section A, on the extent of service delivery in the anti-smoking clinics from the perspective of staff, we can say that most members of the sample considered that anti-smoking clinics provide services at a good level. They agreed that anti-smoking clinics implemented many educational activities, worked on raising community awareness of the dangers of smoking, and they also educate patients about the dangers of smoking.

The entire sample of staff in anti-smoking clinics agreed that these clinics develop a positive tendency to help smokers quit smoking, and provide an information service free of charge for smokers of all ages.

Generally speaking, from calculating the average of arithmetic means which reached (4.0), it can be said that the respondents considered that anti-smoking clinics offer a range of services and will help smokers quit smoking.

5.1.2. Section B of the questionnaire for professional staff in the clinics: results.

Section B: The effect of anti-smoking and awareness programs and educational programs on discouraging tobacco use.

Objective 2: To explore the perceptions of clients and health care services professionals in the Riyadh region on the effectiveness of the clinics in raising awareness of the dangers of smoking, in order to encourage smokers to quit.

This section contained ten statements, the majority relating to awareness of the hazards of tobacco use (Statements 7, 10, 11), publicising the services offered by the clinics (Statements 10, 11), the role of the clinics in motivating smokers to quit (Statements 12, 14, 15) and effective treatment procedures (Statements 8,9, 13). Table 5.3 gives the responses obtained. These statements were intended to elicit responses that would help to realise Objective 2 of the study – to explore the role of the clinics in raising awareness of the dangers of smoking.

Table 5.3.

Responses of the sample of staff to the statements in Section B (n = 25**)**

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
		n	%	n	%	n	%	n	%	n	%			
6	Anti-smoking clinics seek, in collaboration with stakeholders, to take all possible measures, both preventive and therapeutic, to reduce the prevalence of smoking and tobacco use within the community	00	00	1	4.0	4	16.0	15	60.0	5	20.0	4.0	0.7	98.2**
7	Anti-smoking clinics spread individual and community awareness about the harms of smoking through modern means of communication such as TV and the Internet	00	00	2	8.0	6	24.0	13	52.0	4	16.0	3.8	0.9	89.6**
8	Anti-smoking clinics follow up cases that fail to quit smoking and address the most important factors leading to that failure using a proper scientific approach	1	4.0	1	4.0	9	36.0	11	44.0	3	12.0	3.6	1.0	110.2**
9	Anti-smoking clinics work on early detection of complications of smoking and send clients to the relevant hospitals to undergo treatment for these complications	1	4.0	00	00	9	36.0	11	44	4	16.0	3.7	0.9	154.2**
10	Anti-smoking clinics participate with the governmental institutions near the clinic and in the neighbouring villages in the region in conducting campaigns in schools and communities to raise awareness of the dangers of smoking and publicise the services of the clinics	00	00	00	00	7	28.0	12	48.0	6	24.0	4.0	0.8	145.8**

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
11	Anti-smoking clinics participate with the non-governmental institutions near the clinic and in the neighbouring areas in the region in conducting campaigns in schools and communities to raise awareness of the dangers of smoking and publicise the services of the clinics	1	4.0	2	8.0	8	32.0	9	36.0	5	20.0	3.6	1.0	140.2**
12	Convincing the smoker of the importance and the necessity of quitting smoking, and his/her ability to do so given sufficient determination, leads to increasing the chance of quitting smoking	00	00	00	00	00	00	17	68.0	8	32.0	4.3	0.5	138.6**
13	Formation of a confidential data bank on smoking – its evolution, case histories and its consequences – increases the number who quit	00	00	1	4.0	8	32.0	9	36.0	7	28.0	3.9	0.8	147.5**
14	Awareness of the concept that smoking is socially unacceptable leads to a growth in the number who quit	00	00	1	4.0	4	16.0	9	36.0	11	44.0	4.2	0.9	125.6**
15	Awareness of the concept that smoking constitutes a great danger to the health of the smoker and others around him leads to a growth in the number who quit	00	00	1	4.0	1	4.0	11	44.0	12	48.0	4.4	0.8	120.9**
Overall mean												3.9	0.8	

* Significant at (0.05) level.
** Significant at (0.01) level.

It is clear from the preceding table that most of the answers of the sample are close to each other, and moving toward approval, as most of the averages of the responses indicate. The lowest arithmetic mean was (3.6) and the highest arithmetic mean was (4.4) and are on track to answer (Agree and Strongly Agree). The table indicates that the values of (Chi^2) for all statements were statistically significant at the level of (0.01) or less, which shows the variation in views of the sample of staff for each of these statements.

Through the average of answers of the sample to the statements in Section B, on the impact of anti-smoking programs and awareness programs on quitting smoking, we can say that most of the members of the sample considered that these programs have an impact on quitting smoking and they do limit its spread. In their view, anti-smoking clinics are seeking collaboration with stakeholders, to take all possible measures, both preventive and

therapeutic, to reduce the prevalence of smoking and tobacco use among members of society. They perceived that this is achieved through convincing the smoker of the importance and the necessity of abstinence from smoking, and ability to do so with will and determination, as well as to establish the concept that smoking is a major threat to the health of the smoker, and non-smokers around him.

In general, by calculating the arithmetic mean (Average mean) which reached (3.9), it can be said that members of the sample agreed that anti-smoking clinics and centres have an effect on smokers and clients in quitting smoking.

5.1.3. Section C of the questionnaire for professional staff in the clinics: results.

Section C: Difficulties facing anti-smoking clinics.

Objective 3: To identify the strengths and limitations of health care (smoking cessation) services provided for smokers in the Riyadh region specifically as a platform for developing those services in the future.

This section comprised six statements. Statements 18-21 refer to logistical difficulties of staff and equipment, it being necessary to ascertain whether, in the opinion of the staff, there were enough material means for them to carry out their work effectively. Statements 16 and 17 relate to the difficulty of persuading smokers to quit, partly because they are not fully aware of all the health implications (Statement 17). Table 5.4 gives the results obtained.

Table 5.4.

Responses of the sample of staff to the statements in Section C (n = 25)

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
		n	%	n	%	n	%	n	%	n	%			
16	The fact that many smokers are content to continue smoking is one of the major obstacles facing the anti-smoking clinics	00	00	00	00	2	8.0	10	40.0	13	52.0	4.6	0.5	172.8**
17	Lack of awareness and full understanding of the dangers of smoking on the smoker himself and his family, is among the difficulties facing anti-smoking clinics in persuading smokers to quit smoking	00	00	1	4.0	00	00	19	76.0	5	20.0	4.1	0.6	170.5**

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
18	Lack of full-time doctors and health workers, where some of them have other work in some other institutions, hampers the work of anti-smoking clinics	00	00	1	4.0	4	16.0	8	32.0	12	48.0	4.4	0.8	158.9**
19	Lack of means of transportation available for each clinic to assist in awareness campaigns and visits to communities, is one of the difficulties facing anti-smoking clinics	00	00	1	4.0	4	16.0	11	44.0	9	36.0	4.2	0.8	146.7**
20	One of the obstacles facing some anti-smoking clinics is a lack of some important devices used in the treatment of the smoker, such as the equipment for measurement of carbon monoxide and the ECG	00	00	1	4.0	1	4.0	12	48.0	11	44.0	4.4	0.8	144.8**
21	Anti-smoking clinics lack some devices to help increase awareness within and outside the clinic, such as TV, video and computers	00	00	2	8.0	3	12.0	11	44.0	9	36.0	4.2	0.8	152.9**
Overall mean												4.3	0.7	

* Significant at (0.05) level.
** Significant at (0.01) level.

It is clear from the preceding table that most of the answers of the sample are close to each other, and moving toward approval, as most of the averages of the responses indicate. The lowest arithmetic mean was (4.1) and highest mean was (4.6). They tend to answer (Agree - Strongly Agree). The table indicates that the values of (Chi^2) for all statements were statistically significant at the level of (0.01) or less, which shows the variation in views of the sample of staff for each of these statements.

Through the averages of the answers of the sample to the statements in Section C, on a range of difficulties facing anti-smoking clinics, one can say that most members of the sample agreed that there is a range of problems, which can be arranged according to the degree of difficulty as follows:

- The fact that many smokers tend to continue their smoking habits was of the most important difficulties facing the anti-smoking clinics; the arithmetic mean was (4.6).
- Lack of full-time doctors and health workers, where some of them have another job in some other institutions, hampers the work of anti-smoking clinics; the arithmetic mean was (4.4).

- The obstacles facing some anti-smoking clinics; a lack of some important devices used in the treatment of the smoker, such as the device used for measurement of carbon monoxide and ECG; the average was (4.4).
- Lack of transportation for these clinics to assist in awareness campaigns and field visits to communities; the arithmetic mean was (4.2).
- Lack of some devices in anti-smoking clinics to help increase awareness within and outside the clinic, such as: TV, video and computers; the average was (4.2).
- Lack of full awareness and full understanding of the dangers of smoking on the smoker himself and his family are among the difficulties facing anti-smoking clinics in persuading smokers to quit smoking; the arithmetic mean was (4.1).

In general, through the calculation of the arithmetic mean (Average mean) of (4.3) it can be said that a sample of staff in the anti-smoking clinics agreed that there is a range of difficulties facing anti-smoking clinics in Riyadh. Among these is the fact that many smokers tend to continue their smoking habits, and there is a lack of full-time doctors and health workers. Some clinics do not have full-time staff, where they may have other work in some other institutions. There is also a shortage in anti-smoking clinics of some important devices needed in the treatment of the smoker, such as the device used for measurement of carbon monoxide and ECG, and a lack of full awareness and full understanding of the dangers of smoking on the smoker himself and his family.

5.1.4. Section D of the questionnaire for professional staff in the clinics: results.

Section D: suggestions for developing the role of the anti-smoking clinics

Objective 3: To identify the strengths and limitations of health care (smoking cessation) services provided for smokers in the Riyadh region specifically as a platform for developing those strengths in the future.

This section consisted of nine statements. Of these, Statements 23-26 relate to the operation of the clinics themselves – the need for more of everything: numbers of clinics, equipment and staff training. Statement 22 referred to the task of stepping up education in the community in general by all organisations concerned. Statements 27-30 relate to government policy and legislation. Evidence of strong agreement with the statements was even more marked in this section, compared with responses to the other sections.

Table 5.5.

Responses of the sample of staff to the statements in Section D (n = 25)

No.	Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	St.D	Chi^2
		n	%	n	%	n	%	n	%	n	%			
22	Continue to raise public awareness of all segments of society and use new methods in order to convey a permanent message that smoking in all its forms and types damages both physical and mental health	00	00	00	00	1	4.0	11	44.0	13	52.0	4.6	0.5	120.3**
23	Increase the number of trained and qualified medical staff working in anti-smoking clinics	00	00	00	00	00	00	12	48.0	13	52.0	4.6	0.5	110.2**
24	Establish specialized courses for staff in the clinics to help them improve their scientific and practical knowledge and to keep them up to date in this field	00	00	00	00	1	4.0	11	44.0	13	52.0	4.6	0.5	113.5**
25	Increase the number of specialized clinics to provide assistance to smokers to quit smoking	00	00	00	00	1	4.0	10	40.0	14	56.0	4.6	0.5	145.2**
26	Assistance by the government in the provision of some necessary medical equipment	00	00	00	00	00	00	6	24.0	19	76.0	4.8	0.4	132.6**
27	Enact legislation and create effective mechanisms for the implementation of this legislation, such as banning smoking in closed and public places	00	00	00	00	1	4.0	6	24.0	18	72.0	4.7	0.6	100.2**
28	Prohibit all forms of advertising and promotion of tobacco products	00	00	00	00	1	4.0	8	32.0	16	64.0	4.6	0.6	150.6**
29	Raise taxes on tobacco companies, thus increasing the prices of their products	00	00	1	4.0	2	8.0	5	20.0	17	68.0	4.4	0.9	136.3**
30	Require tobacco companies to display health warnings on their packaging about the risks of smoking	00	00	00	00	00	00	6	24.0	19	76.0	4.8	0.4	130.9**
Overall mean												4.6	0.5	

* Significant at (0.05) level.
** Significant at (0.01) level.

It is clear from the preceding table that most of the answers of the sample are close to each other, and moving toward approval, as most of the averages of the responses indicate. The lowest arithmetic mean was (4.4) and the highest arithmetic mean was (4.8). They tend to answer (Strongly Agree). The table indicates that the values of (Chi^2) for all statements were

statistically significant at the level of (0.01) or less, which shows the variation in views of the sample of staff for each of these statements.

Through the average of the answers of the sample to the statements in Section D, on a set of proposals that contribute to the development of the role of anti-smoking clinics, most of them agreed with these statements. These proposals were arranged in the order of perceived importance as follows:

- Obtain government assistance for the provision of some needed medical devices; the average was (4.8).
- Require tobacco companies to display signs to warn of the health risks of smoking on their packaging; the average was (4.8).
- Enact legislation and establish an effective mechanism for the implementation of this legislation, such as banning smoking in indoor and in public places; the average was (4.7).
- The continuation of intensive public awareness measures aimed at all segments of society and utilizing new methods in order to convey a permanent message that smoking in all its forms and types is a source of the corruption of physical and mental health; the average was (4.6).
- Increase the number of trained and qualified medical staff working in the anti-smoking clinics; the arithmetic average was (4.6).
- Establish specialized courses for those working in these clinics to help them improve their scientific and practical knowledge and to keep them up to date in the field of smoking cessation; the average was (4.6).
- Increase the number of specialized clinics that provide assistance to smokers to quit smoking; the average was (4.6).
- Prevent all forms of advertising and promotion of tobacco products; the average was (4.6).
- Raise taxes on tobacco companies, and increase the prices of their products; the average was (4.4).

In general, through the calculation of the arithmetic mean (Average mean) of (4.5), it can be said that the sample of clients of the anti-smoking clinics agreed with the statements on what may contribute to the development of the role of the clinics against smoking. This agreement was most marked in the case of government assistance in the provision of some medical

devices needed for anti-smoking clinics, and requiring tobacco companies to display warnings of the health risks of smoking on their packaging.

There was agreement that enacting legislation and the development of effective mechanisms for the implementation of this legislation, such as banning smoking in indoor and public places, was necessary. Respondents also agreed that there is a need for continued intensive public awareness of all segments of society and for utilising new methods in order to send a permanent message that smoking in all its forms is a source of corruption of physical and mental health.

5.2. Trends in the demographic characteristics of professional staff in the clinics

Section A: the extent of the service

I was able to obtain responses to the questionnaire from male staff, owing to the cooperation of those working in the clinics. The significance levels are given for each variable in the table below. The results are shown in Table 5.6.

Table 5.6.

Test results of (f-test) in a sample of staff responses to statements in Section A

Personal variable	Category	Arithmetic mean	D.F	Total of squares	f value	Significance level
Educational level	Diploma or less	4.05	24	1.711	3.08	0.05
	BA	3.75				
	Masters	4.00				
Career	Doctor	3.57	24	8.06	12.54	0.00
	Nurse	3.88				
	Psychiatrist	4.40				
	Administrative	4.30				
Experience level	Less than 5 years	3.40	24	3.79	1.89	0.001
	From 3-5 years	3.78				
	More than 5 years	4.06				

Nationality	Saudi	4.00	24	0.37	1.20	0.27
	Non-Saudi	3.86				

The following points should be noted from Table 5.6:

1. The presence of statistically significant differences in the answers of the respondents working in the anti-smoking clinics in Section A due to the variable 'level of education', shows the value of (f) =3.08. The level of significance (0.05) is equal to the margin of statistically acceptable error, and these differences tend to favour educational level (diploma or less), where there is more approval than within the other educational levels.
2. The presence of statistically significant differences in the answers of the respondents working in the anti-smoking clinics in Section A due to the variable named 'career', shows the value of (f) = 12.54. The level of significance (0.00) is lower than the margin of statistically acceptable error, and these differences tend to favour the members of the sample within the job title (psychiatrist), where they showed more approval than within the other job titles.
3. The presence of statistically significant differences in the answers of the respondents working in the anti-smoking clinics in Section A due to the variable 'years of experience', shows the value of (f) = 1.89. The significance level (0.001) is lower than the margin of statistically acceptable error, and these differences tend in favour of individuals within the sample having high experience (more than five years), where they showed more approval than those within the other categories of years of experience.

Table 5.7.

Test results of (t-test) in a sample of staff responses to statements in Section A

Personal variable	Category	Arithmetic mean	D.F	t value	Significance level
Nationality	Saudi	4.00	24	1.20	0.27
	Non-Saudi	3.86			

There are no statistically significant differences in the answers of respondents in Section A due to the variable of 'nationality', as the value of (t) = 1.20, and the level of significance

(0.27) is larger than the statistically acceptable error. That is to say that the answers of respondents from the Saudis, corresponded with the answers of non-Saudis.

Section B: the impact of anti-smoking programs and educational programs on discouraging tobacco use.

There is a positive response from staff on the effects of anti-smoking programs in general in Saudi Arabia and on the role of the clinics within these programs in particular. Table 5.8. breaks this down by demographic characteristic.

Table 5.8.

Test results of (f-test) in a sample of staff responses to statements in Section B

Personal variables	Category	Arithmetic mean	D.F	Total of squares	f value	Significance level
Educational level	Diploma or less	4.00	24	0.85	1.64	0.199
	BA	3.80				
	Masters	4.00				
Job title	Doctor	3.53	24	11.33	24.69	0.00
	Nurse	3.82				
	Psychiatrist	3.80				
	Administrative	4.40				
Experience level	Less than 5 years	3.10	24	8.85	24.94	0.00
	3-5 years	3.65				
	More than 5 years	4.09				
Nationality	Saudi	3.94	24	0.019	0.072	0.78
	Non Saudi	3.97				

The following points should be noted from Table 5.8:

1. There are no statistically significant differences in the answers of the sample of staff in the anti-smoking clinics in Section B due to the variable ‘level of education’, as the value of (f) = 1.64, and the level of significance (0.199) is greater than the margin of error that is acceptable statistically. This means that the responses obtained from the sample of the staff in the anti-smoking clinics converged at different levels of education.

2. The presence of statistically significant differences in the answers of the respondents working in the anti-smoking clinics in Section B due to the variable named ‘career’, shows the value of (f) = 24.69. The level of significance (0.00) is lower than the margin of error acceptable statistically, and these differences tend to favour of members of the sample within the job title (administrative), where they showed more approval than those within the other job titles.
3. The presence of statistically significant differences in the answers of the respondents working in the anti-smoking clinics in Section B due to the variable ‘years of experience’, shows the value of (f) = 24.94. The level of significance (0.00) is lower than the margin of statistically acceptable error, and these differences are in favour of individuals within the sample having high experience (more than five years), where they gave more approval than those in the other categories of years of experience.

Table 5.9.

Test results of (t-test) in a sample of staff responses to statements in Section B

Personal variables	Category	Arithmetic mean	D.F	t value	Significance level
Nationality	Saudi	3.94	24	0.072	0.78
	Non Saudi	3.97			

There are no statistically significant differences in the answers of respondents in Section B due to the variable of ‘nationality’. The value of (t) = 0.072, and the level of significance (0.78) is larger than the statistically acceptable error. Therefore, the answers of respondents from the Saudis, corresponded with the answers of non-Saudis.

Section C: the difficulties facing the anti-smoking clinics

Table 5.10. provides a further breakdown of the responses according to demographic characteristic.

Table 5.10.

Test results of (f-test) in a sample of staff responses to statements in Section C

Personal variable	Category	Arithmetic mean	D.F.	Total of squares	f value	Significance level
Educational level	Diploma or less	4.33	24	1.39	3.20	0.045
	BA	4.31				
	Masters	3.83				
Career	Doctor	4.17	24	0.55	0.80	0.49
	Nurse	4.30				
	Psychiatrist	4.33				
	Administrative	4.37				
Experience level	Less than 5 years	3.75	24	4.70	12.77	0.00
	3-5 years	4.02				
	More than 5 years	4.41				
Nationality	Saudi	4.26	24	0.42	1.89	0.172
	Non Saudi	4.41				

The following points should be noted from Table 5.10:

1. The presence of statistically significant differences in the answers of the respondents working in the anti-smoking clinics in Section C due to the variable 'level of education', shows the value of (f) = 3.20. The level of significance (0.045) is lower than the margin of statistically acceptable error, and these differences tend in favour of the educational level (diploma or less), where they showed more approval than those within the other educational levels.
2. There are no statistically significant differences in the answers of the sample of workers in the anti-smoking clinics in Section C due to the variable named 'career', which shows the value of (f) = 0.80. The level of significance (0.49), is greater than the margin of statistically acceptable error, which means that answers of sample members of staff in the anti-smoking clinics have converged on the different career levels.

3. The presence of statistically significant differences in the answers of the respondents working in the anti- smoking clinics in Section C due to the variable 'years of experience', shows the value of (f) = 12.77. The level of significance = (0.00), which is lower than the margin of statistically acceptable error, and these differences tend in favour of highly experienced individuals within the sample (more than five years), where they gave more approval than those within the other categories of years of experience.

Table 5.11.

Test results of (t-test) in a sample of staff responses to statements in Section C

Personal variable	Category	Arithmetic mean	D.F.	t value	Significance level
Nationality	Saudi	4.26	24	1.89	0.172
	Non Saudi	4.41			

There are no statistically significant differences in the answers of respondents in Section C due to the variable of 'nationality', which shows the value of (t) = 1.89. The level of significance = (0.172), which is larger than the statistically acceptable error. Therefore, the answers of respondents from Saudis, corresponded with the answers of non-Saudis.

Section D: suggestions for developing the role of the anti-smoking clinics

When the responses to the suggestions in this section are considered, the breakdown into personal variables shows little variation and approximates to an overall mean calculated as 5. Table 5.9. gives the findings obtained. The relative unanimity of views applied not only to the future of the clinics but to the form that government policy should take to combat smoking in terms of legislation and enforcement – enacting bans, raising taxes and, in a positive sense, the use of education to get the message across of the hazards of smoking.

Table 5.12.

Test results of (f-test) in a sample of staff responses to statements in Section D

Personal variable	Category	Arithmetic mean	D.F	Total of squares	f value	Significance level
Educational level	Diploma or less	4.61	24	0.66	3.07	0.05
	BA	4.69				
	Masters	4.33				
Career	Doctor	4.60	24	0.79	2.46	0.06
	Nurse	4.65				
	Psychiatrist	5.00				
	Administrative	4.54				
Years of experience	Less than 5 years	4.50	24	0.73	3.39	0.038
	3-5 years	4.45				
	More than 5 years	4.67				
Nationality	Saudi	4.57	24	0.75	7.06	0.009
	Non Saudi	4.77				

The following points should be noted from Table 5.12:

1. The presence of statistically significant differences in the answers of the respondents working in the anti-smoking clinics in Section D, due to the variable 'level of education', shows the value of (f) =3.07. The level of significance = (0.05), which is equal to the margin of statistically acceptable error, and these differences tend in favour of educational level (BA), where they gave more approval than those within the other educational levels.
2. There are no statistically significant differences in the answers of the sample of workers in the anti-smoking clinics in Section D, regarding the variable named 'career', which shows the value of (f) = 2.46. The level of significance = (0.06), which is greater than the margin of statistically acceptable error. The answers of the sample members of workers in the anti-smoking clinics have converged regardless of their different careers.

3. The presence of statistically significant differences in the answers of the respondents working in the anti-smoking clinics in Section D, relating to the variable of 'years of experience', shows the value of (f) =3.39. The significance level = (0.038), which is lower than the margin of statistically acceptable error, and these differences indicate that highly experienced (more than five years) individuals within the sample gave more approval than those within the other categories of years of experience.

Table 5.13.

Test results of (t-test) in a sample of staff responses to statements in Section D

Personal variable	Category	Arithmetic mean	D.F	t value	Significance level
Nationality	Saudi	4.57	24	7.06	0.009
	Non Saudi	4.77			

The presence of statistically significant differences in the answers of respondents in Section D due to the variable of 'nationality', shows the value of (t) = 7.06, and the level of significance = (.009), which is lower than the statistically acceptable error. The Saudi members of the sample showed more approval than non-Saudis.

CHAPTER 6

Discussion of the Results

This chapter discusses the findings section by section, as presented in Chapters 4 and 5. The discussion is related to the objectives of the study, and with reference to the relevant literature when the social and cultural context of Saudi Arabia is central to discussion of the responses of participants. It should be emphasised again at this point that the purpose of the study was not to measure the effectiveness of the tobacco control policies of the TCP. This chapter discusses the perceptions of stakeholders obtained through the survey results obtained. The perceptions of clients are discussed, then the perceptions of the professional staff, and comparisons are made between the responses obtained from the two surveys.

6.1. Clients questionnaire. Section A: the role of the anti-smoking clinics in education and encouraging smokers to quit

Statements 1-4 in this questionnaire seek in general to explore the overall impression of clients on how they see the role of the clinics. Statements 5-13 are more specific about the knowledge of clients of the various health promotion activities and education strategies in which the clinics claim involvement. The clinics themselves claim to distribute information on the hazards of smoking and the need to quit through working in the community, for example through doctors' and dentists' surgeries, primary health care clinics and hospitals. Statement 5 also includes the provision under the TCP of free quit help lines. Some staff in the clinics claim to visit schools, colleges and community organisations. They are involved in promoting the anti-smoking message during religious festivals and on the WHO World No Tobacco Day, celebrated each year on 31 May. Clients who completed the questionnaire indicated their perception that the clinics carried out this educational role in one or more forms – both in the community and also for patients who visited the clinics.

Policy 4 of the TCP refers to "warning of the dangers of tobacco". The clients perceive that the clinics are involved in implementing this policy. The responses of the clients only relate to the fact that, in their opinion, these educational activities are actually carried out under the TCP. They do not indicate any view about the effectiveness of such activities in dealing with smoking cessation. Statement 4, however, does ask about this question of effectiveness. The positive tendency of smokers to quit is, clients believe, strengthened by the clinics. This has a wider significance than the treatment of those clients who visit the clinics. If clients who responded to the questionnaire consider that treatment strengthened their positive tendency to quit, then this has consequences for all the educational programmes of the TCP. Education

which stresses the benefits to health (for self and, for example, family) and the idea that quitting smoking is possible through sufficient motivation (self-efficacy) and support, would represent a shift of emphasis from a campaign strategy which focuses on the threats posed by tobacco use. Positive action to protect oneself through awareness of the dangers of smoking is considered to be combined in the TCP with awareness of the benefits of not smoking.

Clients agreed with the claim that the clinics work in cooperation with other departments within the TCP and the Ministry of Health as well as with other government departments, such as the Ministry of Education, and non-governmental organisations, such as anti-smoking charities and religious bodies. Clients were aware of the availability of anti-smoking facilities and campaigns conducted through the media and the Internet. Reports in the broadcast media and in newspapers carry information on these. Several articles which appeared in *Arab News* and *The Saudi Gazette* are referred to in the literature review chapter. Statement 11 relates specifically to the issuing of press releases. The TCP also has its own website. The responses to Statements 7-9 indicated that clients were aware of such activities to spread the anti-smoking message.

Finally in Section A, the responses to Statement 13 indicate that clients think that clinics are involved in the promotion of Islamic teaching on tobacco use. This confirms that implementation of Clause 12 of the TCP is considered as taking place in mosques as well as through various other "outlets". This clause states that the TCP aims to undertake education through schools, universities, mosques, shopping malls and government and private institutions, with special programs for the period of Hajj (pilgrimage). As discussed in the literature review (Chapter 2), using religion and enlisting religious authorities in smoking cessation campaigns is a relatively recent phenomenon which has led the WHO Eastern Mediterranean Regional Office to review this approach (Jabbour & Fouad, 2004; Ghouri et al, 2006).

6.2. Clients questionnaire. Section B: the effectiveness of the services provided by the anti-smoking clinics

Raising awareness by health personnel of the dangers of smoking in Arab cultures is a more complex task than might seem apparent. In all cultures, studies have shown general agreement with the view that all health personnel can play a role in spreading awareness on the dangers of tobacco use and all can encourage smokers to quit [among many other articles: Abdullah & Husten (2004); Coleman (2004); Ockene (1987 [i]); Law & Tang (1995)]. The

extent to which this is effective in aiding smoking cessation is, however, unproven according to West et al (2000). However, the latter authors cite US research to support the view that advice and support from a specialist clinic is effective.

Clients agreed in Statement 14 that specialist staff can provide benefits in all-round care. Not only may specialists be the best-qualified to advise on the dangers of smoking in each individual case, but they may also be in a position to provide the best available programs for treatment of individual cases. As Delarue (1973) argues, in specialist smoking cessation clinics, detailed examination of individual cases may influence the motivation of clients to quit, as their treatment is monitored by staff who should possess authoritative knowledge of smoking-related conditions. Although Majeskie et al (1998) advise that doctors should be clear and understandable in communicating with clients who smoke, they are also advised not to appear uncaring or judgmental. Warmth and empathy, according to these authors, increase the chances of success of the cessation intervention.

The remaining statements in Section B concentrate on the role of the clinics in individual treatment of clients, so the statements have a different emphasis from those in Section A, which focus more on the community role of the clinics. Given the degree of social unacceptability of tobacco use on cultural (especially religious) grounds discussed in Chapter 2, issues of privacy and confidentiality of clients (Statement 15) are important in Saudi Arabia. If the clinics are to operate effectively, physical facilities and staff attitudes must provide that degree of privacy which will make clients feel confident about using their services. Clients thought that the clinics provided this to a high standard.

Managing smoking cessation is a task best accomplished in conjunction with specialist healthcare professionals, not least because of the different forms of alternative medical treatment available (Aveyard & West, 2007). Clients considered that their medical needs were being met by the treatment received in the clinics (Statement 16). Clients were asked to respond to Statement 17 because, although treatment in the clinics is free, the medicines prescribed are not free in all cases, and this will place some financial burden on clients, perhaps for a protracted period of time. Nicotine gum or inhaler may be used by some clients for a period of two years or more. Clients also considered that enough information about their condition and treatment was given at the clinics (Statement 19). This goes beyond the definition of brief advice by the Cochrane Tobacco Addiction Group, as “verbal instructions to stop smoking with or without added information about the harmful effects of smoking”.

(Coleman, 2004). Involvement in their individual treatment program may, at best, have a positive impact on the beliefs of self-efficacy of clients and, as Borland suggests (2010), it may be that self-regulatory processes are central to maintaining cessation behaviour.

As might be anticipated, the same result was obtained from the responses to Statements 18 and 20, because both statements relate to the counselling aspect of treatment in the clinics. In behaviour change that is difficult to maintain, including addictions such as smoking, the determinants of trying (to quit) may be different from the determinants of success. For example, wanting to quit may be more influenced by motivational variables than maintaining quit behaviour (Borland et al, 2010). The situation may be more complicated, therefore, than the question of whether counselling interventions (whether individual, group or by telephone quit lines) are effective, as Al-Doghether maintains (2004, [i]). Nevertheless, clients agreed that counselling services were operating in the clinics.

Clients agreed (Statement 21) that clinics conducted many checks to determine the motivation of clients to quit. Clinicians in the clinics in Riyadh assessed motivation through simple qualitative methods, using questions to find out their interest and intentions to quit (Al-Doghether, 2004 [i]). A sufficiently positive response suggests that behavioural support and/or medication should be offered. West (2004) outlines a simple qualitative test, such as that used in NHS cessation clinics, using three basic questions:

1. Do you want to stop smoking for good?
2. Are you interested in making a serious attempt to stop in the near future?
3. Are you interested in receiving help with your quit attempt?

The Transtheoretical or Stages of Change Model assigns smokers to one of five stages of motivation (Prochaska & Di Clemente, 1983). This model has not been used either in designing the questionnaires or in the discussion of the results. As West (2004) indicates, no evidence exists that questionnaires for assigning smokers to specific stages predict smoking cessation any more effectively than these simple, direct questions. Although the model has been widely applied in studies into smoking cessation, further detailed criticism may be found in West (2005; 2006[i]; 2006[ii] and 2009). Prochaska (2006) has defended the use of the TM model principally as a basis for discussion of motivation and a stimulus for further research, rather than a rigid framework. In the Riyadh clinics, clients agreed that they were

questioned about their motivation to quit, but there is no evidence that such questions are founded on the TM or any other model of smoking behaviour.

Encouraging the attendance of clients at the clinics involves providing a supportive, confidential environment and series of procedures. Clients agreed that the clinics fulfilled this role (Statement 22). At best, this may suggest that staff adopt a patient-centred approach, discussing the options to support a quit attempt and, in short, offering help rather than simply instructing clients or just advising them to do something which most already know they should do and, in some cases, have tried to stop many times.

Statement 23 seeks the views of clients on the treatment offered for clients who fail to quit. They thought that the clinics did follow up those cases where relapse occurred. There are no proven effective psychological interventions to prevent relapse after the initial few weeks of abstinence, it is a question of pharmacological intervention (Aveyard & West, 2007). There are the other cases, where the client never succeeds in quitting. As Aveyard and West state, there is insufficient information to know which elements of behavioural support are effective or whether one approach, such as motivational interviewing or cognitive behavioural therapy, is more effective than another. So, the response of clients to this statement can in no way be a description of reality, only the reporting of a perception.

6.3. Clients questionnaire. Section C: the difficulties facing the provision of services by the anti-smoking clinics

The responses of clients expressed their view that the clinics were operating effectively despite specific problems and implied that, were more resources to be allocated to address them, the work of the clinics would be even more effective in both their treatment and educational roles. It is worth noting that in Section B of the questionnaires for both clients and professional staff, the service-users and service-providers considered that the clinics did have the staff resources to follow up cases of patients who failed to quit. However, in this section, both groups also considered that there were not enough staff in the clinics to provide the best possible treatment. There was, therefore, a degree of inconsistency in the responses.

The difficulty referred to in Statement 25 may be associated in part with this perceived lack of time for the staff to attend to individual patients. It may also in part be associated with the

attitudes of staff. In the UK, public health intervention guidance recommends that advice to stop smoking should be sensitive to the individual's preferences, needs and circumstances (NICE, 2006). While clients think that there could be more support material (Statement 29) in the waiting room of the clinics, this would be useful only for giving general information and advice and access to the TCP website but not for dealing with individual patients. According to the Royal College of Nursing in the UK, in a series of publications on smoking, communicating effectively when dealing with patients will help them work out for themselves why they smoke and why they should stop, so listening to them and summarising with them their reasons will help smokers much more than simply giving advice (NICE, 2006).

In Section A of both questionnaires, respondents had considered that clinics carried out activities to raise awareness of the dangers of smoking. These activities need to be extended to reach more smokers in the community if the views of clients in response to Statement 26 are correct. The reason for including a reference to the family of the smoker in this statement was based on the findings of Al-Dawood's study of the pattern, prevalence, knowledge and practice of smoking among parents of 6-15 years old schoolboys in Al-Khobar city, Saudi Arabia (Al-Dawood, 2000). In the Saudi context, parental smoking was found to be a major health problem, with damaging impacts. It has already been confirmed (in a meta-analysis by Leonardi-Bee et al, 2011) that parental and sibling smoking is a significant determinant of the risk of smoking uptake by children and young people.

6.4. Clients questionnaire. Section D: suggestions to develop the role of the anti-smoking clinics

Clients agreed with all nine statements in this section. Statement 30 referred to the importance of continuing to educate all the community. It is the only statement in this section which deals with (in the terminology of Fong et al, 2006) psychosocial mediators, affecting the beliefs, attitudes, outcome expectancies and quit intentions. The TCP has a Department of Awareness and Health Campaigns which is responsible for organizing and coordinating efforts to promote awareness of the dangers of tobacco use, through both local interventions and mass media campaigns. Importantly, particularly among young people in schools and colleges, education may have an effect in dissuading students from taking up the

smoking habit. It may also raise awareness of the dangers to non-smokers of inhaling environmental tobacco smoke (Coleman & Bauld, 2011).

Statements 31-38 all relate to policies which could be implemented through the TCP. It is not argued here that these are in any way isolated from the psychosocial mediators; they are rather policy-specific variables that interact with behavioural variables to produce policy-relevant outcomes (Fong et al, 2006). Thus, Statement 38 refers to the need for new graphic warning labels on cigarette packets that should increase salience and noticeability of warnings. Price should affect the costs of tobacco products (Statement 37), leading more smokers to believe that these products have become too expensive. Although Abdullah and Husten (2004), for example, argue that the smoking cessation models used (up to that time) in some studies in developed countries may have mixed applicability in other parts of the world, many policy changes such as increased tobacco taxes, smoke free policies, advertising bans and more prominent warning labels can be applied in most countries. These measures may be both cost-effective and some are revenue-generating, and they may increase cessation and reduce initiation.

The responses to Statements 31 and 32 indicate the view of clients that more trained staff in the clinics are needed and also that more training should be carried out. The Syrian Centre for Tobacco Studies has trained scientists and conducted research to build the knowledge base needed to guide tobacco control efforts in Syria. It may provide a useful model of international partnership with scientists and institutions in other countries for the Saudi TCP to follow for its specialist physicians to receive training and become integrated into a wider international research community (Ward et al, 2006).

In the view of clients, an increase in the number of clinics in Saudi Arabia (Statement 33) would increase the demand for more specialist trained staff, with knowledge about the latest anti-addiction forms of treatment (Statement 34). Clients thought that the clinics should not only be increased in number but they should also be provided with all the medical equipment necessary – a possible shortcoming noted in the responses of clients and staff in Section C of the questionnaires. An ideal to aim for might be a range of diagnostic facilities to include pulmonary function tests, flexible video bronchoscopies and endobronchial ultrasound equipment, even if these could only be afforded in one smoking cessation clinic to which patients could be referred. In particular, installation of carbon monoxide measurement

devices and training in their application and use would seem to be a minimum requirement in each clinic (Jarvis et al, 1986; Middleton et al, 2000; Deveci et al, 2004). The value of smoking topography devices, such as could be installed in the clinics, has been indicated in the study by Strasser et al (2004). These are useful to predict abstinence after using NRT therapy and to assess harm from smoking through measuring cigarette puff volume, duration and velocity.

There was agreement among clients that all tobacco promotion should be banned (Statement 36). When combined with media campaigns against smoking (Statement 30 again refers), this could result in a powerful anti-smoking message reaching the population, without the influence of conflicting messages from the tobacco industry at the macro-level (Poland et al, 2006). These industry messages are referred to by Balbach et al (2006), as based on individual rational choice theories and they note the continued role permitted to the tobacco industry as information provider for the sovereign consumer.

6.5. Clients questionnaire. Section E: motivation to stop smoking

The responses to Statements 40-42 show that the clients were aware of these services provided by the clinics, all of which are aimed at encouraging smokers to quit. In particular, Statements 40 and 41 relate both to pre-quit and to post-quit services. These services are capable of being tailored to the needs of the individual smoker. In an exhaustive review of studies of the effectiveness of telephone quit lines on quitting rates, Stead et al (2006) referred in their systematic review to their motivational and educational impacts. Their availability alone may have a symbolic role in emphasising the importance of smoking cessation (Wakefield & Borland, 2000). They may increase the number of smokers who make a quit attempt each year because of the awareness generated by the campaigns to promote them (Ossip-Klein & McIntosh, 2003) and they may encourage referral (Boldemann et al, 2006). The questionnaire responses indicated that clients were aware that these quit lines could be accessed to provide information and support.

Sections A-C in the questionnaire for clients incorporated a number of statements that referred to motivation to quit. From their responses to these statements, the response to Statement 39 could have been anticipated. Clients agreed that the clinics strengthen motivation to quit.

6.6. Professional staff in the clinics. Section A: the extent of the service

This section discusses the responses of the service-providers to five statements. The response of the professional staff confirms that their views are in accordance with those of the clients. The staff "strongly agree" that the clinics play an educational role in addition to the role of providing treatment for clients. Statement 2 invites the staff to give their opinion on whether the clinics help to raise community awareness on the dangers of smoking. This is explored in Section B of the questionnaire for the professional health care staff. They agree that the clinics increase community awareness of the negative aspect of the "perceived threat" of tobacco use, referred to in the comments on the responses from the clients. The staff therefore expressed their view that the clinics were succeeding in raising community awareness of the hazards of smoking. This suggests that their opinion is that programmes aimed at emphasising the "perceived threat" of smoking may have some impact in an educational sense. These responses accord with research conducted in a number of UK studies, most notably by Lichtenstein et al (1990-1991) and Thompson et al (1990-1991) for the COMMIT Research Group and an Indian study (Anantha et al, 1995) on the role of education in the community on the dangers of smoking.

Statement 3 in the questionnaire lists three different roles of the clinics, to which the staff are able to give only one response. They agree that the clinics undertake research, rehabilitation and training. There is little evidence to support the view that the clinics undertake research. It is simply referred to in the TCP Report as "continuous activity" in Clause 20. There is an important published article by AlBedah et al (2011), and the Global Youth Tobacco Surveys, to indicate that research is under way in Saudi Arabia, though not conducted through the clinics. There is a mention in the goals of the TCP Report of rehabilitation. As Etter and Stapleton (2006) conclude in their meta-analysis, tobacco dependence treatment may be viewed as a chronic disorder, requiring repeated episodes of treatment. There is no framework established in which clients receive an organised programme to cope with those who relapse. A systematic review by Agboola et al (2010) suggests that self-help materials appear to prevent relapse in initially unaided quitters, which is not the case with most of the clients who present themselves for treatment in the clinics. The use of NRT has been proven to be effective in preventing relapse (Agboola et al, 2010; Bentz, 2009).

Training is referred to in both the goals and activities of the TCP and at some length in Clause 12 of the TCP Report. The organisational structure of the TCP, set out in the Report,

includes a training department with designated personnel. Training of health professionals should, it has been argued, form part of an evidence-based strategy on smoking cessation and treatment of tobacco dependence (Marin-Tuya, 2002). Such professionals interact with smokers as care providers and health communicators in their dual roles in Saudi Arabia. The TCP does, indeed, organise training courses, such as that reported in King Fahad Hospital in July 2011 on 'Approved Pharmacotherapy for Smoking Cessation' (Ministry of Health, KSA, 2011).

The health care professionals were only neutral on Statement 4, the accessibility of the clinics for clients. This is significant, since the problem of smoking prevalence in Saudi Arabia is increasing and the provision of specialist clinics is still in the initial stages. Other health care professionals, for example, may not recommend patients to attend the clinics when there are no such clinics in the neighbourhood. Some type of integrated service, through which referrals could be made to smoking cessation clinics, would improve accessibility.

6.7. Professional staff in the clinics. Section B: the effect of anti-smoking programs and educational programs on quitting smoking

In seeking the views of staff in this section, the statements sought to assess their understanding of individual behaviours as social practices, routinised and socialised behaviours common to smokers (Poland et al, 2006) and their treatment.

The Report of the TCP refers to its activities at specific times and during specific campaigns, using short television spots and the TCP website to promote smoking cessation: school summer vacations, pilgrimage season, World No Tobacco Day, Gulf Tobacco Control Week. Balbach et al (2006) consider that media campaigns not only serve to educate individuals, in terms of perceived threats to their health, they can also work to change the policy environment and the public image of the tobacco industry. The staff agreed that the clinics spread awareness of the dangers of smoking through these means (Statement 7). This is important because medical and social contexts can potentially be linked through media interventions. Treatment and awareness can be connected through critical educational approaches which seek to change community perceptions of what is and what is not desirable in Saudi (specifically Muslim) society. Borland and Balmford (2003) report on several studies showing the impact of media campaigns in Australia following the National Tobacco

Campaign in 2001. They reported that these stimulated quitting activity and led to a detectable decline in smoking prevalence. The positive response of clinic staff to Statement 7 was that they considered that the TCP was conducting such campaigns.

There is a connection between this response and the responses to Statements 14 and 15. These statements also refer to the work of the clinics in a social context. The responses of the staff indicate the importance they attributed to the two concepts – that smoking is socially unacceptable and that awareness of the harm that it causes to self and others will lead to an increase in the numbers who quit. The influence of perceived threat is thus acknowledged by the staff, this time in a social rather than individual context. Social context at a micro-level (family and peer social networks) is recognized in the response to Statement 15.

At the same time, the staff believed that the work of the clinics includes educational interventions through a variety of social institutions (Statements 10 and 11), recognising the central importance of place with respect to smoking. The staff were, therefore, aware of their dual role of raising awareness through social and individual interventions as well as their dual role in providing individual treatment in the form of behavioural and pharmacological interventions. The clients, as discussed in Section 6.2, also shared these perspectives.

The responses to Statement 13 show that the staff thought that the formation of a database on smoking, giving some overall social picture, would lead to an increase in the number who quit. Health professionals in hospitals, primary health care centres and private surgeries could collect the data. The type of information that could be documented in record sheets on smoking status and intervention as part of routine health care by all clinicians would include smoking status, number of cigarettes smoked and motivation to quit (Coleman, 2004).

The responses to Statements 8 and 9 were both positive about the work of the clinics. The value of specialist treatment provided by the clinics is seen through the procedures, which the staff believe to be followed, of referral to appropriate hospital units for those suffering from smoking-related complications. In all cases, staff in the clinics believed that failure to change was followed up and the reasons for failure identified. This is a considerable claim and a reflection of their faith in the effectiveness of their work.

6.8. Professional staff in the clinics. Section C: difficulties facing anti-smoking clinics

Statement 16 refers to those smokers who are not considering quitting. This choice to continue smoking may be despite the fact that they recognise the severity of the health risks, their personal susceptibility to smoking-related diseases or even the perceived benefits of quitting. This group is content to continue their habit and no cues to action have so far persuaded them otherwise. The above terms are explained in relation to health behaviour in Rosenstock et al (1988), Sutton (2002) and Becker (ed, 1975). Staff considered in their response to this statement that such an attitude was a major obstacle to reducing tobacco use. The proportion of smokers in Saudi Arabia who do not contemplate quitting is not recorded. A study in another Muslim country (Pakistan) may provide some guide: 52% of the participants reported that they wanted to stop smoking, but the remainder either did not wish to stop or were unsure (Qidwai, 2004).

In Statement 17, the lack of awareness referred to understanding of the dangers of smoking, the perceived severity and perceived susceptibility of the risks of tobacco use. This statement again mentioned the family in relation to awareness, as was done in the case of the questionnaire for clients (Statement 26).

Taken together with Statements 25 and 26 of the clients' questionnaire, the responses to Statements 16 and 17 expressed their idea that further interventions were needed to raise awareness in one or more of the following fields: cessation interventions in routine health care generally, interventions through the mosques, media campaigns or community/schools initiatives. However, caution must be exercised in relation to regular cessation interventions, in addition to questioning their effectiveness (referred to in Section 6.3). Solberg and Kottke (1998) recommend that physicians should first ask their patients who smoke about their interest in quitting before offering advice. If there is already an interest in quitting, then suggestions and assistance are more appropriate. This is why the National Cancer Institute in the USA suggested the 4 As guideline for physician behaviour on smoking: ask, advise, assist, arrange (Glynn, 1990). This question of how the physician addresses the patient is important in terms of patient compliance (Majeskie et al, 1998). In fact, these guidelines have been taken further (Al-Doghether, 2004[i], Coleman, 2004) to include: ask about

smoking at every opportunity; assess smokers' interest in quitting; advise against smoking; assist smokers to stop; arrange follow-up – the 5 As.

The remaining statements 18-21 refer to the same practical difficulties over staffing, equipment and facilities as were in Section C of the clients' questionnaire. Among the staff, there was a similar measure of agreement with the statements to that voiced by clients. The fact that both service-users and service-providers recognise the same difficulties and share the same level of agreement suggests that they perceive real problems in these areas that need to be addressed. Under-resourcing in the areas referred to in these statements will clearly impact on the educational and treatment roles of the clinics.

6.9. Professional staff in the clinics. Section D: suggestions to develop the role of the anti-smoking clinics

With minor changes, the same statements were put to staff in Section D of the questionnaire as were put to clients. The response this time was that they strongly agreed (median 5) with the statements. Their view was strongly supportive that these were some of the ways forward, and indicated at least a part of the future direction of the TCP. There was no difference from the responses of the clients that this dual role of the clinics should continue, raising community awareness on the dangers of smoking and providing the best possible treatment in the clinics. They see the clinics as playing a role in the broader task of creating a social environment in which tobacco use is no longer an acceptable custom (Delarue, 1973), as their strong agreement with Statements 27-30 indicates.

Among the new methods mentioned in Statement 22, in 2010 Dr Al-Munif, the General Supervisor of the TCP, announced the intention to take the anti-smoking message to social network sites such as Facebook (Rasooldeen, 2010). The advantage of studies such as that by AlBedah et al (2011) is that these can be used to identify different areas in which anti-smoking messages can be placed effectively. To take just one example, the authors found that 46% of the smokers surveyed used the Internet daily and they recorded the favourite TV and radio channels, newspapers and magazines of respondents. This type of information will be invaluable in devising future intervention strategies.

The responses to Statements 23-26 are no surprise, since strong agreement with an improvement in the working conditions for staff and the availability of medical equipment is only to be expected. There are plans to establish a model smoking cessation clinic in Riyadh, with the most modern equipment and facilities to train health workers involved in the clinics. The clinics would be electronically linked to the model clinic to exchange information and experience with one another (Rasooldeen, 2009[ii]).

In a broader social context, staff were asked to give their views on banning smoking in public places (Statement 27). Since 2010, smoking has been banned in airports in the Kingdom and in Riyadh, King Faisal Specialist Hospital and Research Centre has become the first hospital to ban smoking on the premises. Some workplaces have introduced their own measures. Smoking is banned in government ministries and it is restricted in many public places such as cafes, restaurants, shopping malls and the courtyards of mosques. Enactment of more legislation on restricting smoking and its effective implementation are regarded by the staff as important areas for the future direction of public policy on smoking.

6.10. Comparisons between responses of clients and professional staff in the clinics

In Section A of the questionnaires, Statement 1 was similar for both clients and staff. While both sets of respondents agreed that the clinics undertake educational activities, the agreement on the part of the staff was most emphatic. As service-providers, this educational role was clearly recognised as one for which they were responsible. Statement 2 was the same in the two questionnaires, and this relates to the perceived effectiveness of the educational activities in Statement 1. Here, the mean obtained for clients was higher than for the staff, who appear to be less certain about the role of educational activities in actually raising awareness in the community of the dangers of smoking. Statement 5 was the same in both questionnaires, and the responses obtained showed a high level of agreement that clients and staff thought that information services were available to smokers (across different age groups).

In Section B, of the questionnaires, Statement 23 for clients and Statement 8 for staff are similar. These relate to the follow-up of cases where patients have failed to quit smoking.

The mean obtained (3.6) was identical in both surveys. Although there was agreement that such cases were followed up, it cannot be said that this tended strongly towards 'Agree'. In both sets of questionnaires, the majority of responses were concentrated around 'Neutral' and 'Agree'.

Section C of the questionnaires contain a number of similar statements. Statement 26 of the clients questionnaire and Statement 17 of the questionnaire for staff both refer to lack of awareness of the dangers of smoking on the part of the smoker and their family. The staff consider that this represents more of a difficulty for the clinics (in trying to raise this awareness) than is perceived by the clients, whose response was between 'Neutral' and 'Agree'. Statement 27 in the client questionnaire and Statement 19 in the staff questionnaire both refer to the lack of transportation available for staff to conduct educational field visits. Here, there is little difference in the response obtained, which indicate agreement that this is seen as a practical problem. In the client questionnaire, Statement 28 refers to the lack of some important equipment, such as that used to measure carbon monoxide levels (essential to check if a patient has actually quit). This is Statement 20 in the staff questionnaire. In this case, the response of the staff falls between 'Agree' and 'Strongly Agree' – a more emphatic view than expressed by clients, whose responses indicate 'Agree'. Clients responded 'Agree' also to Statement 29, on the lack of equipment in the clinics to support education of patients, and a similar result was obtained from staff (Statement 21).

Finally, in Section D of the questionnaires, Statement 30 of the client questionnaire refers to the continuing need among the community to raise educational awareness of the dangers of smoking. This is Statement 22 in the staff questionnaire. Agreement was high with this statement among both sets of respondents, and especially marked among the staff. There was also agreement on the need to provide more trained specialist staff in the clinics – Statement 31 in the client questionnaire and Statement 23 in the staff questionnaire. As in the previous statement, agreement was particularly strong on this point among the staff. In the UK, the National Centre for Smoking Cessation and Training has an online training program aimed at improving practitioner knowledge on behaviour change techniques and their delivery (Brose et al, 2012). Training in both knowledge and skills form aspects of the competences of practitioners that will make a significant contribution to effective treatment of smokers who they are helping to quit. The TCP must consider using this tool.

Statement 32 of the client questionnaire and Statement 24 of the staff questionnaire both refer to the need for more courses for training staff in the clinics. This time, both sets of respondents tend towards strong agreement with the need for such training. The clients (Statement 33) and staff (Statement 25) both showed the same tendency towards strong agreement with the necessity of establishing more smoking cessation clinics. The need for more medical equipment in the clinics was referred to in Statement 35 of the client questionnaire and Statement 26 of the staff questionnaire. Again, the tendency towards strong agreement is very notable among both sets of respondents and almost unanimously 'Strongly Agree' among the staff.

Some statements on wider aspects of tobacco control policy were included towards the end of the questionnaires. Statement 36 in the client questionnaire refers to the policy of prohibiting all promotion of tobacco. This is Statement 28 in the staff questionnaire. The mean obtained from the responses was the same (4.6), indicating strong agreement with such a measure. Increasing the price of tobacco through taxation was another measure on which the questionnaires sought the views of respondents (Statement 37 in the client questionnaire and Statement 29 in the staff questionnaire). The responses overall indicated agreement with such a policy, most marked among the staff. Finally, warning labels on tobacco products was referred to in Statement 38 of the client questionnaire and Statement 30 of the staff questionnaire. There was strong support for this from both sets of respondents, especially among the staff, where the mean obtained was 4.8. It must be recalled that such warning labels would refer to all tobacco products – including *shisha*.

A critical point must be noted at this juncture. It links to some of the limitations of the thesis discussed in Chapter 7. In their analysis of the performance of the English Stop Smoking Services, West and colleagues (2013) were able to use mandatory monitoring data collected by the HSCIC, to analyse service data for the previous 10 years. Records of treatment given and outcomes enabled some firm conclusions to be reached. However, in the case of Saudi Arabia, no such data from the smoking cessation clinics has ever been collected, let alone made publically available. The only option in this study was, therefore, to conduct a survey of the *perceptions* of stakeholders in the TCP on its performance. The data for an objective measure of the performance of the clinics in treatment of clients simply did not exist.

CHAPTER 7

Limitations and Recommendations

This chapter will first discuss the contribution of the findings presented in the thesis to knowledge in the field of health research. The limitations of the study are then discussed along with alternative approaches which might have been adopted to overcome some of the limiting factors. Population and sample factors are considered. The ethical considerations relating to the conduct of the research are next discussed; these are important given the sensitive nature of the opinions solicited from the participants. Finally, the chapter will conclude with recommendations for further areas of research in this domain.

7.1. Original contribution to knowledge

The research has the aim of investigating the perceptions of the male clients and health care professionals in Riyadh on the overall approach to smoking cessation in Saudi Arabia. The Report of the Tobacco Control Program produced by the Ministry of Health in 2009 represents a review of what has been achieved since the Program's foundation in 2002 and an outline of tasks still to be completed.

There are two aspects to be considered in the Saudi context – the actual functioning of the TCP itself as reviewed in the Report and the *perceptions* which are held of the Program. Once it is agreed that these perceptions are important – in such areas as public support for the Program and the morale of those involved as health professionals – then the need will be conceded for the value of a study which looks at how effectively the Program is seen as operating, according to its many and diverse objectives. This study, in other words, sets out the views of stakeholders (male patients and health professionals in the clinics) on the Program. These views can be considered alongside the objectives of the TCP to reach a broader understanding of what is working well in the Program as well as the difficulties which remain. It is intended that the results will be useful for the officials in the Ministry responsible for the successful development of the Program. Thus the study is important since it will inform those responsible for drawing up policies for those services implementing the TCP.

The high level of personal contact with participants, as outlined in Chapter 3, in the distribution and collection of questionnaires was key to the high response rate obtained from the surveys. Considering that the participants all shared first-hand knowledge and experience of some aspects of the functioning of the TCP, the relative unanimity of views (see Chapter 6), indicates that the views expressed were held largely in common.

No study has previously looked at the views of service-users and service-providers in the clinics set up by the TCP. Al-Doghaither & Saeed (2000) studied consumer satisfaction with primary health services in the city of Jeddah, though this related to general treatments and not to smoking-related health problems specifically. The review of the literature has referred to a number of studies into smoking in Saudi Arabia in terms of the general adult population, most notably AlBedah et al (2011), Jarallah et al (1999), and Siddiqui et al (2001). There have also been a larger number of studies into smoking among particular sectors of the population. Adolescents form the most populous age bracket in Saudi Arabia (Surour, 2001). Adolescents (youth) were the subject of two studies as part of the Global Youth Tobacco Survey in 2001-2002 and 2007 (AlBedah et al, 2010]), as well as other studies including Al-Damegh et al (2004), Al-Yousaf & Karim (2001), Jarallah et el (1996), Abdalla et al (2007) and Al-Lehiany & Stanley (2009). Smoking among medical students was researched by Hasim (2000), Al-Haqwi et al (2010), Wali (2011), Saeed (1987), Saeed et al (2012) and Almutairi (2010) and among physicians by Siddiqui & Ogbeide (2001), Al-Shahri & Al-Almaie (1997) and Al-Mobeeriek et al (2008).

This study has revealed a marked level of agreement on the part of the service-users and the service-providers (Section 6.10). There was little confusion on either part about the services which the clinics were responsible for providing and were actually providing. None of the statements in the questionnaires had been put previously to patients (clients) or health care professionals in the clinics. This study was, therefore, the first time that their perceptions had been sought.

7.2. Limitations of the study

The organisation of the TCP is based in Riyadh and the highest concentration of clinics is also to be found in the capital city. As Bassiony (2009) has pointed out, most studies on smoking in the Kingdom have included only males and have been carried out in Riyadh. All comments on the original contribution to knowledge in this study must also be qualified by this same limitation. Some research has pointed to the greater prevalence of smoking in the eastern and western regions of the country than in the south (Jarallah et al, 1999), but even the conclusions of these authors suggest that such differences are not greatly significant when compared with differences in gender, economic status and age. Nevertheless, this study has not taken into account that perceptions of the functioning of the TCP may vary across

different regions of the country. Factors such as the accessibility of clinics and the availability of treatment could influence perceptions of the TCP in different areas. Only a series of coordinated regional satisfaction surveys could resolve this question.

It would have been useful to compare the results obtained with the questionnaires that were returned directly to me by the respondents (immediately after completion), with the questionnaires that were returned later in a sealed envelope to the reception staff in the clinics. This might have provided at least some indication of the influence of my personal presence on participants as they completed the questionnaires. If there had been any significant differences in the responses, this might have indicated some response bias as a result of the setting in which the questionnaires were completed.

It would also have been instructive to record the smoking and treatment history of each participant. The results could then have been analysed for any significant differences in the responses. Details such as the number of cigarettes smoked daily, the number of years that the client had smoked, the length and frequency of attendance at the clinics, the type of treatment given, and the number of failed quit attempts could all have been obtained and enriched the data obtained for analysis.

For social and cultural reasons, it was not possible to include women in the study. A different approach would have necessitated the assistance of a female fellow researcher to seek the participation of female clients in the clinics to complete the questionnaire. Researchers have noted two phenomena – many more men smoke than women and that smoking among women is on the increase (Al Ghobain et al, 2011; Al- Turki & Al-Rowais, 2008: Siddiqui et al, 2001). These indicate the need for future studies into smoking cessation to include a study of the factors that motivate women to take up smoking and measures that may be taken to combat this growing tendency.

Through testing for validity and reliability, I could be reasonably assured that the views expressed by different groups according to a number of factors, such as age and nationality, did not differ significantly. Only a further analysis, focusing on the responses broken down by these categories could, however, definitively demonstrate that no such significant differences did exist.

It was also impossible to conduct comprehensive mixed methods research. Qualitative data could not be used to supplement the questionnaire findings. The difficulty arose through the unwillingness of participants in the interviews to be recorded, again for social and cultural reasons. In Saudi culture in general, in addition to the specific context of where and with whom the study was conducted, there is a degree of unwillingness to express disagreement with authority. Despite assurances to the contrary, potential interviewees were concerned that their expressed views might prejudice either their treatment (in the case of clients) or their job security/prospects in the case of the health care professionals.

Despite all the reassurances that were given to participants, the certainty of obtaining responses that were honest appraisals of the functioning of the TCP could not be guaranteed. I attempted to establish if this was the case by asking certain related questions in a different way. However, despite such precautions, doubts must remain and greater experience in questionnaire design on my part would have resulted in a questionnaire that could more successfully detect any tendency towards providing responses which the participant believed were wanted by the researcher. While I hope that the painstaking efforts which I made to assure confidentiality and anonymity to all participants might have resulted in honest responses (Section 3.4.3), I cannot be sure that this was the case, given an obeisance to authority which may profoundly affect cultural attitudes in Saudi Arabia. This is not the place for a sociological study into such a phenomenon, whether it exists and how it might operate. Suffice to say, that must be considered a real limitation of the study in the absence of any evidence that can be provided to the contrary.

7.3. Alternative approaches

The argument for using Likert scales in the questionnaires has been outlined in Chapter 3. Since Likert scales were used, it was, therefore, initially thought to be unwise to use parametric testing to analyse the results, since this is regarded as one of the 'deadly sins' of statistical analysis (Kuzon et al, 1996). This view has not been supported by a number of authors, including de Winter & Dodou (2010). I therefore adopted parametric testing, treating the data – effectively – as interval. The Thurstone scale was considered as an alternative to a 5-point Likert scale, being simple and easy for respondents to use, but this has more usually been applied to measure appraisals of health states or subjective health outcomes (Krabbe, 2008). It has also been widely used for the estimation of preferences

among objects in the field of applied psychology (Lipovetsky, 2007). Overall, therefore, there seemed little reason to depart from the use of Likert scales in this study.

Categorising the data obtained as interval would have meant that the Kruskal-Wallis test would be invalid. I changed my original plan to treat the data as ordinal, and instead treated the data as interval, enabling me to apply the ANOVA test. It was also impossible to group questions. Factor analysis (PCA) was considered as an option, but this assumed uniformity and was impossible to justify (Field, 2005). Cronbach's alpha coefficient was therefore used on individual questionnaire statements against the entire questionnaire.

An alternative approach had also been considered in relation to the sample population. The choice of distributing the questionnaire to students at Al-Qassim University in Saudi Arabia, both smokers and non-smokers, would have had the major advantage of being simple to administer. However, a number of references have been made in this study to the benefits of conducting a survey with a purposive sample of participants, to include both service-users and service-providers in the smoking cessation clinics. Had the study been concerned with attitudes to smoking or smoking cessation in general, then the choice of purposive sampling would not have been so critical. However, answers to the specific research question required that respondents should have some degree of knowledge and experience of the practical functioning of the TCP and that they should do so from two different aspects as clients and providers. Within this purposive framework, convenience sampling was a practical option.

There was thus a real tension between the arguments in favour of conducting a purposive sample and the conduct of a random sample, such as a household survey, which might have eliminated potential problems of bias resulting from conducting the surveys in the smoking cessation clinics. On reflection, I would follow the procedures adopted by May et al (2009) to measure patient satisfaction with stop smoking services. This would not be entirely free of respondent bias, though it would be preferable in this respect to the setting of this survey for clients. The survey method adopted for professional health care staff in the clinics, to assess their perceptions of the TCP, would remain unchanged, as I can see no alternative option for obtaining their views.

7.4. Ethical considerations

In the collection of data, cultural differences in ethical standards must be noted between Saudi and Western norms. Medical ethics in Saudi Arabia have not been debated as extensively as in Western Europe or the United States (Saeed, 1999). Given the justified fears and concerns of participants in the study, it was essential that the ethical principles established in Western cultures should nonetheless be applied. This was not a requirement laid down by those authorities in Saudi Arabia who consented to the conduct of this research. It was, however, essential in terms of obtaining attempting to obtain the honest views of participants, without the fear that their treatment or career might be prejudiced by their replies.

Ethical considerations of health care policy are not a separate and discrete area. They are closely related to issues of clinical ethics (Cribb, 2008). Person-centred care and population-oriented policy are linked and so research into the latter should be as sensitive as it would be into the former. My personal involvement in the data collection process was therefore critical at a number of points in both the pilot and the main study. Participants had to be assured of the confidential nature of all views that they expressed, so that no views could be attributed to any one individual and they had to be given full information about the purpose for which findings might be used. They also had to be assured of their complete freedom of choice about whether to participate and their right to withdraw from the study at any time. I covered all these points when I explained my research and handed out ethical consent forms to patients and staff in the clinics. While time-consuming, it was a necessary procedure and helped (in my view) to ensure a satisfactory response rate. In view of my reservations about obtaining honest responses from participants, discussed in the limitations of the research, placing emphasis on ethical considerations was my only strategy to break down barriers of reserve and doubt. However, the conflict between obtaining a high response rate and obtaining answers with limited respondent bias was a practical dilemma, and there is no evidence whether I succeeded or failed in breaking down those barriers.

7.5. Recommendations for future research

One area that respondents indicated in their questionnaire replies was the need to extend and enforce more strictly the regulations on tobacco sales, price, label warnings and public smoking. The effects of changes in policy, or application of policy, would then require

systematic monitoring to calculate their effectiveness. The price of cigarettes in Saudi Arabia is still very low compared with the US and Europe. Studies into the relationship between price increases and tobacco consumption in the West have been referred to in Chapter 2.

The study by AlBedah et al (2011) to draw a profile for cigarette smokers in Saudi Arabia and to study their media habits has enabled the health authorities to identify different segments of smokers and the greatest opportunities to send anti-smoking messages to them. This continuous survey of consumer usage and habits can also be used to monitor trends and behavioural changes and to determine the most effective means of communication to reach the various segments. Other research initiatives are required. It would be particularly useful to study the proportion of aided to unaided quit attempts and their outcomes at determined periods. Resources also need to be allocated to record treatment outcomes at each smoking cessation clinic along with the recording of data relating to the treatment of each individual patient. Some grounds would then exist not just for the study of perceptions of the TCP but also for its success in treating patients. Although a quantitative study into the effectiveness of activities to raise awareness of the need to quit might be difficult to design, it might be possible to design a qualitative study to this effect.

I also argue that there should be systematic measurement of dependence in tailoring cessation interventions to individual smokers. This will determine the choice of pharmacotherapy. This could be carried out quantitatively using the most commonly internationally used measure in dependence measurement – the Fagerstrom test for nicotine dependence (West, 2004; Heatherton et al, 1986). Although the Stages of Change Theory has been widely criticised, this does not mean to say that all tests of motivation to stop smoking should therefore be abandoned. A simple qualitative test could be applied at visits to primary health care centres, asking just three questions:

- Do you want to stop smoking for good? Yes/No
- Are you interested in making a serious attempt to stop in the near future? Yes/No
- Are you interested in receiving help with your quit attempt? Yes/No

A ‘yes’ response to all questions suggests that behavioural support and/or medication should be offered (West, 2004). The practical objective of assessing motivation is to identify smokers who are ready to make a quit attempt. Once a decision to quit is made, success is determined more by the degree of dependence than the level of motivation. These tests

should be carried out regularly in the PHCCs, because motivation to stop can vary considerably with time and may be strongly influenced by the immediate environment (West, 2004).

Up-to-date data tracking of national smoking patterns and cessation-related behaviour is required to evaluate and inform tobacco control strategies. The Smoking Toolkit Study (STS) was designed for this role (Fiddler et al, 2011), providing information about smoking prevalence and behaviour. This study is confined to England, but it is producing key findings that are useful for Saudi tobacco control policies. To take one example, World No Tobacco Day is promoted as an important annual intervention as part of the TCP in Saudi Arabia. Kotz et al (2011) used the STS in England to study the increase in rate of quit attempts made during the month in which No Tobacco Day occurs relative to months on either side. They estimated that this event contributes about 6000 long-term ex-smokers each year. They also estimated the cost effectiveness of the expenditure on this event in the light of this figure. The conclusion is that in England, it is well worth the effort of promoting No Tobacco Day (a WHO initiative). A similar study is needed to substantiate this conclusion for Saudi Arabia, using this same toolkit. The recommendation is therefore to continue with the TGI surveys, but also to research motivation and dependence in the Saudi context, building on how this has been studied internationally.

Monthly national surveys are needed to produce some answers to the research question on why smoking prevalence is increasing in Saudi Arabia. I argue that the Smoking Toolkit Study provides the best means of conducting this research, covering a range of key variables that should be tracked to inform policy and practice to promote reduction in harms from smoking in the Kingdom. Finally, regular evaluation of client satisfaction with smoking cessation services themselves must be undertaken. The survey approach adopted by May et al (2009) in the UK could serve as a model for such evaluation. This present study has only investigated the perceptions of the Tobacco Control Policy of two informed groups of respondents. It has, at best, suggested that the answer to the research question may lie outside any failings in the operation of the TCP. The scope for further research then is broad and, I argue, could profitably be pursued along the lines indicated.

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Appendix 1:

RESEARCH INFORMATION LEAFLET

An investigation into the perceptions of male smokers and health care professionals in the smoking cessation clinics in Riyadh on the Tobacco Control Program in Saudi Arabia

INVITATION TO TAKE PART IN RESEARCH

QUESTIONNAIRE FOR CLIENTS ATTENDING THE CLINICS

- I would like to invite you to take part in a research study. This research is being conducted as part of my dissertation at the University of Huddersfield in the United Kingdom. Before you decide, it is important for you to understand why the research is being done and what it will involve. The information is given in two parts.
- **Part 1** explains why the study is being done
- **Part 2** gives you more detail about what will be involved and what to expect if you agree to take part.

Take time to decide if you would like to take part or not and please contact me if you would like more information. My contact details are given below.

PART 1. What is the research about?

The main purpose of the study is to obtain your views on the services provided by the health care clinics to help smokers to quit their habit.

Why have I been invited to take part?

You have first-hand knowledge and experience of the anti-smoking program and, therefore, your assessment of the program is particularly valuable. My study covers many aspects of the treatment provided and your views are of special importance in seeing what is working well and also where improvements may be possible.

Do I have to take part?

It is up to you to decide if you want to take part. If you do decide to take part, you are free to withdraw at any time without giving a reason and this will not affect any care you receive.

What will happen to me if I decide to take part?

If, after reading this research information leaflet, you are willing to take part, please complete the consent form and questionnaire and return them to my address at the Medical Services Department in the enclosed addressed envelope.

No-one will be identified from the research results and no names will be used in the study report. All information will be kept completely confidential.

What are the possible risks in taking part?

There are no risks in taking part. The treatment that you are receiving will not be affected in any way.

What are the possible benefits in taking part?

Taking part in the study may not benefit you immediately. However, all information you provide will be useful in helping to improve care and treatment to combat smoking.

PART 2. What if there is a problem in taking part?

If you would like any further information about the research, or if you are unhappy about any aspect of the study, please contact me, Khaled Al-Turki:

E-mail – U0866412@hud.ac.uk or at my Riyadh office: 014976500 ext. 1226.

Will my taking part in the study be kept confidential?

Yes, because I have a duty of confidentiality to you as a research participant and I will do my best to meet this duty. I will follow the best ethical and legal practice and all information collected about you for the research will be kept strictly confidential. When you complete your questionnaire, you will post it to me in the enclosed sealed envelope with my name and address that I will provide for you. I will collect data from your questionnaire and I will put a code number, not names, on the forms so you cannot be recognised. The data from the questionnaires will be kept in a locked cabinet in my personal office in the Medical Services Department in Riyadh.

What will happen to the study results?

The study results will be presented as part of my doctoral thesis. You will not be identified in any report or publication. As your views are important, the findings of my thesis will be made available to the Director of the Tobacco Control Program in Saudi Arabia.

***Who is funding the study*?**

It is funded by the Medical Services Department in Riyadh.

Who has reviewed the study?

To protect your safety, rights, well-being and dignity, this study has been approved by the School of Human and Health Sciences Research Ethics Panel at the University of Huddersfield, United Kingdom.

Thank you very much for reading this information

Appendix 2:

RESEARCH INFORMATION LEAFLET

An investigation into the perceptions of male smokers and health care professionals in the smoking cessation clinics in Riyadh on the Tobacco Control Program in Saudi Arabia

INVITATION TO TAKE PART IN RESEARCH

QUESTIONNAIRE FOR HEALTH CARE PROFESSIONALS

- I would like to invite you to take part in a research study. This research is being conducted as part of my dissertation at the University of Huddersfield in the United Kingdom. Before you decide, it is important for you to understand why the research is being done and what it will involve. The information is given in two parts.
- **Part 1** explains why the study is being done.
- **Part 2** gives you more detail about what will be involved and what to expect if you agree to take part.

Take time to decide if you would like to take part or not and please contact me if you would like more information. My contact details are given below.

PART 1. What is the research about?

The main purpose of the study is to obtain your views on the services provided by the health care clinics to help smokers to quit their habit.

Why have I been invited to take part?

You have first-hand knowledge and experience of the anti-smoking program and, therefore, your assessment of the program is particularly valuable. My study covers many aspects of the treatment provided and your views are of special importance in seeing what is working well and also where improvements may be possible.

Do I have to take part?

It is up to you to decide if you want to take part. If you do decide to take part, you are free to withdraw at any time without giving a reason.

What will happen to me if I decide to take part?

If, after reading this research information leaflet, you are willing to take part, please complete the questionnaire and return it in the sealed envelope provided which has my name and address. No-one will be identified from the research results and no names will be used in the study report. All information will be kept completely confidential.

What are the possible risks in taking part?

There are no risks in taking part. Your anonymity and confidentiality will be strictly safeguarded and your work will in no way be prejudiced.

What are the possible benefits in taking part?

Taking part in the study may not benefit you immediately. However, all information you provide will be useful in helping to improve care and treatment to combat smoking.

PART 2. What if there is a problem in taking part?

If you would like any further information about the research, or if you are unhappy about any aspect of the study, please contact me, Khaled Al-Turki:

E-mail: u0866412@hud.ac.uk or my office number in Riyadh 014976500 ext. 1226.

Will my taking part in the study be kept confidential?

Yes, because I have a duty of confidentiality to you as a research participant and I will do my best to meet this duty. I will follow the best ethical and legal practice and all information collected about you for the research will be kept strictly confidential. I will collect data from your questionnaire and I will put a code number, not names, on the forms so you cannot be identified. The data from the questionnaires will be kept in a locked cabinet in my office in the Medical Services Department in Riyadh.

What will happen to the study results?

The study results will be presented as part of my doctoral thesis. You will not be identified in any report or publication. As your views are important, the findings of my thesis will be made available to the Director of the Tobacco Control Program in Saudi Arabia.

Who is funding the study?

It is funded by the Medical Services Department in Riyadh.

Who has reviewed the study?

To protect your safety, rights, wellbeing and dignity, this study has been approved by the School of Human and Health Sciences Research Ethics Panel at the University of Huddersfield, United Kingdom.

Thank you very much for reading this information

Appendix 3:

An investigation into the perceptions of male smokers and health care professionals in the smoking cessation clinics in Riyadh on the Tobacco Control Program in Saudi Arabia

Questionnaire for clients attending the clinics

I have been fully informed about this study and I am willing to take part. □

Personal Information

1- Age:.....

2- Educational Level:

□High school and below □Intermediate diploma

□ Bachelor □ Masters or PhD

3- Occupation or former occupation:

□ Student □ Employee in private sector

□ Employee in Public sector□ Unemployed □ Self-employed

4- Nationality:

□Saudi □ Non-Saudi

Please put (x) beside the answer that expresses your opinion and you find most appropriate

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
A. The role of anti-smoking clinics in educating and improving the tendencies of smokers to quit						
					Anti-smoking clinics perform many educational activities.	1
					Anti-smoking clinics boost the level of community awareness of smoking dangers.	2
					Anti-smoking clinics educate patients on the dangers of smoking.	3
					Anti-smoking clinics enhance the positive tendency to help smokers to quit smoking.	4
					Anti-smoking clinics offer informational services free to smokers of different ages.	5
					Anti-smoking clinics offer medical checks free to smokers of different ages.	6
					Anti-smoking clinics spread community knowledge on the dangers of smoking through modern communication media such as TV and the internet.	7
					Anti-smoking clinics participate with official corporations in conducting campaigns in schools and populated areas to promote education on the hazards of smoking.	8

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
					Anti-smoking clinics participate with non-official corporations in conducting campaigns in schools and populated areas to promote education on the hazards of smoking.	9
					I am aware that anti-smoking clinics issue booklets to achieve their goal of increasing the numbers who want to quit smoking.	10
					I am aware that anti-smoking clinics issue bulletins to achieve their goal of increasing the numbers who want to quit smoking.	11
					I am aware that anti-smoking clinics issue stickers to achieve their goal of increasing the numbers who want to quit smoking.	12
					I am aware that anti-smoking clinics conduct religious educational meetings for smokers in order to inform how the Islamic religion deals with smoking.	13
B. The extent of efficiency of the services of the anti-smoking clinics.						
					Anti-smoking clinics give the help needed to provide benefits through qualified staff specialized in this field.	14
					Services in the anti-smoking clinics are offered with a high degree of privacy and confidentiality for clients.	15

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
					The treatment programs of anti-smoking clinics care for the medical circumstances and needs of the patient.	16
					The treatment programs of anti-smoking clinics care for the financial circumstances and needs of the patient.	17
					The treatment programs of anti-smoking clinics care for the psychological circumstances and needs of the patient.	18
					Anti-smoking clinics provide enough information on treatment methods and their advantages before carrying them out.	19
					Anti-smoking clinics are responsible for the behavioural as well as medical treatment of those persons willing to quit smoking.	20
					Anti-smoking clinics identify the determination of clients to quit smoking by conducting checks.	21
					Staff at anti-smoking clinics deal in a professional way with smokers to make them feel comfortable and welcome in the clinic.	22
					The anti-smoking clinics follow up the cases that fail to quit smoking and treat the most important reasons and factors causing the failure in a proper scientific manner.	23

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
C. Difficulties facing those who benefit from the services of the anti-smoking clinics						
					Due to pressures of work, the professionals in the clinics do not have enough time to provide the best treatment for each client.	24
					There is insufficient attention paid to the smoker (the smoker's beliefs and opinions and the degree of concern about his/her health).	25
					There is a lack of awareness of the dangers of smoking on the part of the smoker and his/her family.	26
					There is a lack of means of transportation at anti-smoking clinics to help them in their educational campaigns and field visits.	27
					There is a lack of many important devices used in treating the smoker, such as the carbon monoxide measuring device and the cardiograph device.	28
					There is a lack of support equipment in the clinics for educating clients, such as TV, video and the computer.	29

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
D. Suggestions for developing the role of the anti-smoking clinics						
					Continue to educate all the community in order to convey the message that smoking is a danger to physical and mental health.	30
					Increase the number of qualified and trained workers in the clinics.	31
					Hold professional development courses for workers in these clinics to provide up-to-date training.	32
					Increase the number of clinics.	33
					Provide the latest anti-addiction forms of treatment.	34
					Government help for the clinics by providing them with the medical equipment they need.	35
					Prohibit all promotion of tobacco.	36
					Increase the taxes on tobacco companies, forcing them to raise the price of tobacco.	37
					Force these companies to state the dangers of smoking on their tobacco packets.	38
E. Motivations to stop smoking						
					The anti-smoking clinics strengthen the motivation of the client to quit.	39
					The anti-smoking clinics organize some form of recognition of the achievement of smokers who succeed in quitting.	40
					The clinics provide free help lines.	41

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
					The clinics provide treatment free of charge.	42

Researcher: Khaled Al-Turki: e-mail u0866412@hud.ac.uk or tel: 014976500 ext.1226.

Appendix 4:

An investigation into the perceptions of male smokers and health care professionals in the smoking cessation clinics in Riyadh on the Tobacco Control Program in Saudi Arabia

Questionnaire for Professionals who work in the anti-smoking clinics

I have been fully informed about this study and I am willing to take part. □

First: Personal Information

1- Job Title:

□ Physician □ Nurse □ Psychologist

□ Administrator □ Social worker

2- Educational Level:

□ Intermediate diploma or below □ Bachelor

□ Masters □ Ph.D.

3- Years of experience in your field:

□ Less than 3 years □ 3-5 years□ more than 5 years

4- Nationality:

□Saudi □ Non-Saudi

Please put (x) beside the answer that expresses your opinion and you find most appropriate

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
A: The extent of the service						
					Helping smokers to quit smoking, and protecting non-smokers from falling victim to smoking addiction is a priority of anti-smoking clinics.	1
					Anti-smoking clinics conduct educational activities that raise community awareness of smoking hazards.	2
					Among the goals of anti-smoking is activating the role of rehabilitation, research and training in the fight against smoking.	3
					Anti-smoking clinics are spread throughout most of the Kingdom and they are uniformly distributed to facilitate their access.	4
					The services offered by anti-smoking clinics ensure confidentiality and privacy for patients.	5
B: The effect of anti-smoking programs and educational programs on quitting smoking.						
					Anti-smoking clinics undertake, in cooperation with agencies concerned, to suppress the spread of the smoking phenomenon and the use of tobacco in the community.	6
					Anti-smoking clinics spread awareness on smoking risks through modern communication media like TV and the internet.	7

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
					Anti-smoking clinics follow up the cases that fail to quit smoking and treat the reasons for that using a correct scientific approach.	8
					Anti-smoking clinics work on the early detection of smoking complications and send clients to the proper hospitals to undergo treatment for these complications.	9
					Anti-smoking clinics participate with official bodies within their areas and the neighbouring villages in conducting campaigns in schools and populated areas to enhance awareness of smoking dangers and to publicise the services of the clinic.	10
					Anti-smoking clinics participate with non-official bodies within their areas and the neighbouring villages in conducting campaigns in schools and populated areas to enhance awareness of smoking dangers and to publicise the services of the clinic.	11
					Convincing the smoker of the importance and the necessity of quitting smoking, and his/her ability to quit given sufficient determination, leads to increasing the chance of quitting.	12
					Formation of a confidential data bank on smoking - its evolution, case histories and its consequences, increases the number who quit.	13

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
					Awareness of the concept that smoking is socially unacceptable leads to a growth in the number who quit.	14
					Awareness of the concept that smoking constitutes a danger to the health of the smoker and others around him leads to a growth in the number who quit.	15
C: Difficulties facing anti-smoking clinics						
					The fact that many smokers are content to continue smoking is one of the most important obstacles facing clinics.	16
					The lack of awareness and perception of the dangers of smoking to the smoker and his family is among the difficulties facing anti-smoking clinics in convincing the smoker to quit.	17
					The work of the anti-smoking clinics is disrupted by the fact that the doctors and employees in some of these clinics are not full-time employees since they have other duties at other institutions.	18
					Among the difficulties facing anti-smoking clinics is the lack of means of transportation available for each clinic, which makes it difficult for them to conduct educational campaigns and visits to the populated areas.	19
					Among the difficulties facing some anti-smoking clinics is that many important devices used to	20

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
					treat smokers are unavailable, such as the device for measuring carbon monoxide and the cardiograph device.	
					This anti-smoking clinic lacks some auxiliary equipment for patient education, such as TV, video and computers.	21
D: Suggestions for developing the role of anti-smoking clinics						
					Continue the intensive education of all levels in the community, using new methods in order to convey a permanent message that the smoking habit in all its forms is a source of physical and mental damage to the body.	22
					Increase the number of qualified and trained workers in the anti-smoking clinics.	23
					Hold up-to-date specialist courses for staff in these clinics will help them to gain scientific and practical knowledge in the field of fighting smoking.	24
					Increase the number of these clinics.	25
					Help for the clinics from the government by providing them with some of the medical equipment they need.	26
					Make legislation and create an effective mechanism to execute this legislation, such as prohibition of smoking in closed and public places.	27

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		No
					Prohibit all kinds of promotion of tobacco products.	28
					Raise the taxes on tobacco companies, thus increasing tobacco prices.	29
					Force these companies to display on their packaging a sign to warn of the health dangers of smoking.	30

Researcher: Khaled Al-Turki: e-mail u0866412@hud.ac.uk or tel: 014976500 ext.1226.

Appendix 5

University of
HUDDERSFIELD
Inspiring tomorrow's professionals

30 July 2010

Mr Khaled Alturki
Research Student
School of Human and Health Sciences
University of Huddersfield

Dear Khaled

School Research Ethics Panel (SREP) Submission
Title of Study: "An assessment of the views of smokers and health care professionals on the smoking cessation program in the Riyadh region of Saudi Arabia through a combined method approach"

I confirm that your project, as titled above has received ethical approval from the School of Human and Health Sciences Research Ethics Panel, University of Huddersfield.

I also confirm that indemnity for this project will be covered by the insurance policy held by the University of Huddersfield, as it falls within the normal range of research activity.

With best wishes for the success of your research.

Yours sincerely

Prof Nigel King
Co-Chair, SREP
School of Human and Health Sciences

Direct Tel: +44 (0)1484 472812
Email: n.king@hud.ac.uk

Queensgate Huddersfield HD1 3DH UK Telephone +44 (0) 1484 422288 Fax +44 (0) 1484 516151
Vice-Chancellor: Professor Bob Cryan BSc MBA PhD DSc
An exempt charity and a centre of excellence for learning, teaching and research

Appendix 6:

Publications:

Alturki, K. (2011) The Effectiveness of the Smoking Cessation Program in Saudi Arabia: An Assessment of the Views of Smokers and Health Care Professionals in the Riyadh Region. *International Journal of Interdisciplinary Social Sciences* 2011, Vol. 6(1): 73-80.

Alturki, K. (accepted for publication) An Investigation of the Smoking Cessation Program in Saudi Arabia. *International Journal of Interdisciplinary Social Sciences.*

Conference Papers:

6th International Conference on Interdisciplinary Social Sciences, USA (2011): An Assessment of the Views of Smokers and Health Care Professionals on the Tobacco Control Program in Saudi Arabia.

Conference Paper & Presentation:

7th International Conference on Interdisciplinary Social Sciences, Spain (2012): An Investigation of the Perceptions of Smokers and Health Care Professionals on the Tobacco Control Program in Saudi Arabia.