1.0 INTRODUCTION
1.1 Background
Tobacco use is an epidemic; it spreads within societies and from one society, and one population to another. There follows in its wake a plethora of tobacco-related diseases, albeit after a lapse in time. In the absence of tobacco, some diseases such as lung cancer might be almost non-existent, and others such as chronic lung disease would be rarer. Once the addiction takes hold in a society, it had been perceived to be almost impossible to overcome it.

This is probably the reason why since its spread around the world in the 16th century, tobacco use has persisted with no population completely giving up one form of tobacco without replacing it by another.

Socio-cultural factors such as social acceptability, peer and parental influence, in conjunction with environmental factors, such as exposure to tobacco advertisements, promotions and marketing, and the availability of tobacco, help to initiate and fuel the smoking habit. Smoking is both an addiction and an over-learned habit. Seven possible types of smoking have been identified.

1. Psychosocial- for increase in self-confidence in a social situation.
2. Sensiromotor- for oral, sensory and manipulatory satisfaction (the smoking action).
3. Indulgent - smoking for the pleasure it gives.
4. Sedative- to achieve a feeling of calm.
5. Addictive- smoking to relieve or avoid withdrawal symptoms due to nicotine.
6. Stimulation- the use of nicotine to combat stress and monotony.
7. Automatic- heavy smokers who light up without thinking and are usually unaware of smoking, becoming aware only when they run out of cigarettes.

Any given smoker could fall into one or more of these seven categories of smoking for different reasons and at different times.

1.2 Prevalence

There are about 1.2 billion smokers in the world today. One billion men smoke; with a prevalence rate of about 35% in developed countries and about 50% in developing countries, while 250 million women smoke with a 22% and 9% prevalence rate in developed and developing countries respectively\(^4,5\).

Chollat-Treguet et al\(^1\) (1992) report that, cigarette consumption increased by 2.1% per annum globally but increased by approximately 3.4% in developing countries while declining by 0.2% in developed countries. In Africa specifically, population growth, socio-economic changes, increased availability plus the low price of tobacco and exposure to adverts combined with inadequate health information concerning the ill-health effects of tobacco use continue to fuel tobacco use\(^5,6\).

This has led to an increase in the prevalence rate of smoking of the developing countries\(^7\) and as a result most of the world’s smokers live in developing countries (800 million) and most of them are male (700 million)\(^5\).

In Africa 36% of men and 10% of women smoke and cigarette smoking is the preferred form of tobacco consumption\(^8\).
In the South African adult population, cigarette smoking has decreased by 26%, from a prevalence rate of 32% in 1993 to 25% in 2000\textsuperscript{9,10,11}. Here, smoking prevalence is also associated with race and gender\textsuperscript{9}. Race and gender were associated with the prevalence of smoking. In two separate studies by Peltzer K’s (though, of non-medical students) in 2001\textsuperscript{12,13}, race was identified as a factor in the smoking prevalence (Africans-11.2% and Whites23.6%)\textsuperscript{12} and that among the Africans, the males smoked much more (15%) than their female counterparts (1%)\textsuperscript{13}. Other studies, including one from Meyer-Weitz et.al\textsuperscript{14} and another from Steyn et al 1998\textsuperscript{15} point to a declining prevalence rate of smoking in South Africa.

In South Africa about 43.8% and 12.9% of the adult male and female population, respectively, smoke\textsuperscript{16} and prevalence was significantly higher in urban areas than in rural areas. Guthrie et al (2001) stated that for the youth (16 years and below) with an age of initiation as early as about 10 years the prevalence rate was about 19.6\%\textsuperscript{17}. A 2002 Global Youth Tobacco Survey (GYTS) however estimates the smoking prevalence rate for youths 15 and over to be 16.2\%, with 5.8\% of the subjects smoking on a daily basis and 14.5\% using other non-cigarette tobacco\textsuperscript{18}.

The World Health Organisation (WHO), Center for Diseases Control (CDC) and The Canadian Public Health Association (CPHA) recently (2005) collaborated under the umbrella of The Global Health Professionals Survey (GHPS)\textsuperscript{19} to determine the prevalence of tobacco use and the perceptions of cessation counselling among WHO member states. The study found that smoking
prevalence rates ranged from 18.1% (Republic of Serbia-Belgrade medical students) to 47% (Albania pharmacy students-3rd years). Overall, in this study prevalence rates were about 20% in seven of the 10 countries surveyed.

Attention must be given as well to the use of smokeless tobacco because its use poses some risks and in some countries, is emerging as a major health concern over the last two decades\textsuperscript{20,21}. Ayo-Yusuf et al\textsuperscript{22} state that smokeless tobacco, with a nicotine content of 6-16mg/g, a pH of 7-10 and a percentage free based nicotine of 10-99% has a high nicotine delivery capability, enough to ensure addiction.

Maziak et al\textsuperscript{23} have criticised the lack of studies on hookah use (tobacco smoking using a water pipe). Research on the use of hookahs is still not as extensive as studies pertaining to cigarette smoking. So far there have been 64-hookah-related-studies with 51 carried out in the Middle East, nine in Asia, two in Europe and one each in Australia and in the USA. The onset of hookah use was found to be about 19 years on the average, in all the countries studied. The prevalence rates varied widely from about 22% for both males and females (in Egypt and Israel) to about 57% (males) and 69% (females) in Kuwait\textsuperscript{23}.

\textbf{1.3 Morbidity and mortality}

Previously, the burden of tobacco deaths was mainly borne by developed countries, but with the decline of smoking in these countries and the rising rates in developing countries, it is expected that 70% of tobacco related deaths would occur in the developing countries by the year 2025\textsuperscript{24}.
The World Health Organisation (2002)\textsuperscript{23} states that the mortality due to tobacco in developing nations is already half (50\%) of the global total, which currently stands at about 5 million and continues to rise.

Women and children are also not spared from this epidemic. Tobacco use leaves an avoidable trail of death and destruction that is responsible for 1.1 million deaths of women and children worldwide, each year\textsuperscript{25}.

Dr. Gro Harlem Bruntland\textsuperscript{26}, former Director-General of the World Health Organisation has stated: "More people smoke today than at any other time in human history. One person dies every 10 seconds due to smoking related diseases". Mackay\textsuperscript{27} stated that the overall health picture of smoking usually becomes evident about half-a-century after a sizeable population of young adults adopts the addiction.

Tobacco related deaths have been projected to increase from 3 million in 1990 to 8.4 million in 2020, which will make tobacco one of the highest causes of death\textsuperscript{28}. Although awareness that tobacco use is harmful is reasonably high, people, however, generally persist in underestimating how serious it really is\textsuperscript{29}. This can be demonstrated by the fact that even though about 4,000 people die from road accidents each year in the UK and 120,000 die from tobacco related illnesses, the general public still perceived death by road accidents as more common and more important than death from use of tobacco products\textsuperscript{29}.

Despite the fact that many smokers are aware that they are running the risk of killing themselves slowly, people just cannot seem to quit easily once the addiction takes hold\textsuperscript{29}. 

Tobacco use is associated with many forms of cancer affecting the lungs, mouth, pharynx, oesophagus, larynx, pancreas, kidneys and cervix\textsuperscript{30}. Smokers are at 10 times the risk of contracting lung cancer compared to non-smokers\textsuperscript{30}. In fact in most developed countries, 80 to 90\% of lung cancers are attributed to tobacco smoking while smokeless tobacco has been implicated with various cancers of the oral cavity\textsuperscript{21}.

Respiratory illnesses caused by smoking usually present as chronic obstructive pulmonary diseases, including bronchitis and emphysema\textsuperscript{31}. About 80-90\% of deaths from chronic obstructive lung disease are attributed to tobacco and smokers have 6 times the risk of contracting this disease compared with non-smokers\textsuperscript{30,32}.

Everett et al\textsuperscript{33} suggested after carrying out a study of 5 public sector hospitals in Capetown, that doctors needed to be more sensitised concerning their underrated perception of the magnitude of the links between smoking and disease of women during pregnancy as compared with the more highly regarded risks of other diseases including; HIV/AIDS, poor nutrition, alcohol abuse and psychosocial stress.

Smoking has been linked to many pathologies of the reproductive system. Reproductive problems like primary and secondary infertility, delays in conceiving, and during pregnancy; premature rupture of the membrane, *abruptio placenta* (separation of placenta from the uterine wall), *placenta previa* (obstruction of the placenta by the cervical os) as well as lower birth weights of about 200 to 250 grams have also been associated with smoking\textsuperscript{34}. Smoking is
also associated with earlier onset of menopause and an increased risk of endometrial cancers in females\textsuperscript{35}.

According to Hirschfelder smoking can increase the incidence of impotence by 50\% in healthy males. It clogs blood vessels of the penis in the same manner that it can clog blood vessels of the heart and brain\textsuperscript{34}.

Also, women who use contraceptives have an elevated risk of coronary heart disease if they smoke\textsuperscript{36}. Smoking causes increased risk of cardio-vascular diseases including chronic heart disease, ischaemic stroke and sub-arachnoid haemorrhage\textsuperscript{34,36,38}.

Smoking may be associated with lower bone density that may lead to an increased risk of fracture at sites other than the hip, in elderly women\textsuperscript{38}.

Even though it is difficult to determine, which predisposes the one to the other: tobacco use (smoking) and depression, there seems to be a strong association between the two\textsuperscript{39}.

Sitas et al\textsuperscript{40} (1998) in South Africa were able to, in a case control study, link smoking with deaths from tuberculosis (OR 1.2, 95\% C.I. 1.5-3.8), COPD (OR 2.5, 95\% C.I. 1.9-3.4), lung cancer (OR 48, 95\% C.I. 2.9-80), upper aero-digestive cancer (OR 3.0, 95\% C.I. 1.9-4.9) and ischaemic heart disease (OR 1.7, 95\% C.I. 1.2-2.3).

Smokeless or spit (snuff and chewing) tobacco has also been associated with increased risk of morbidity and mortality from stroke and heart disease. Two prospective (cohort) studies\textsuperscript{41} one commencing in 1959 (12-year follow-up) and
the other in 1982 (18 year follow-up) provided evidence linking spit tobacco with heart disease and stroke.

Tziomakos et al (2004) have linked tobacco use to endocrine changes in humans affecting the hypothalamus-pituitary axis (ACTH), the thyroid gland, the adrenal gland and the occurrence of diabetes mellitus42.

1.4 Environmental tobacco smoke

Exposure of non-smokers to tobacco smoke pollution is also a major concern. The gravity of this exposure varies according to different regions and this is most notable in Asia, where 60% of the male population are smokers and thus expose millions of women and children to the dangers of passive smoking25.

Some substances are found in greater concentration in undiluted sidestream smoke than in inhaled smoke, including nicotine (x 2.7), carbon monoxide (x 2.5), ammonia (x 73) and some carcinogens, for example, benzo-e pyrene (x 3.4)43. Environmental tobacco smoke has been associated with ear infection, asthma and slow rate of lung growth in children37. Major health effects of second hand tobacco smoke (SHS) include lung cancer and coronary heart disease in adults and respiratory diseases in children44. Environmental tobacco smoke also increases the risk of sudden infant death syndrome25.

An example of the diverse effects of environmental tobacco pollution was described in a 1998 population-based case control study of 35 districts carried out in Czechoslovakia that revealed that parental smoking and unfavourable socio-economic circumstances were strongly linked with invasive meningococcal disease in children of smokers45.
1.5 Nicotine dependency

Nicotine is addictive and its discontinuation produces cravings and other withdrawal reactions. It also follows that a period of deprivation of the substance produces a higher than normal compensatory consumption in order to regulate blood levels of nicotine\textsuperscript{37,46}.

A cigarette has been described as a highly engineered nicotine delivery system that provides an amount of nicotine sufficient to establish and maintain dependence on tobacco\textsuperscript{44}. Though the nicotine delivery mode varies\textsuperscript{33} across tobacco products, the most preferred form of ingestion is by smoking, because of the rapid effects that addicts get in terms of the nicotine delivery\textsuperscript{47,48}.

Addicted, tobacco users experience serious withdrawal symptoms if they attempt to quit. These symptoms include; drowsiness, fatigue, insomnia, inability to concentrate, hostility, anxiety and cravings for tobacco\textsuperscript{49}. It is therefore to maintain blood nicotine levels and avoid these unpleasant withdrawal effects that addicted tobacco users continue to ingest tobacco\textsuperscript{50}.

The United States tobacco companies have been accused of substantially increasing the tar and nicotine content of tobacco products designated for the developing nations in an attempt to enhance addiction\textsuperscript{51}.

1.6 Economic impact due to tobacco

The cost of the tobacco industry to the society, by far outweighs its benefits\textsuperscript{52} The World Bank has described as illusory financial benefits that are attributed to the tobacco industries and on the contrary warn of the net losses that amount to billions of dollars spread over nations worldwide due to tobacco use\textsuperscript{6}.
Global health care costs resulting from tobacco use exceed $200 billion annually, more than the current health budgets of all the developing countries combined together\textsuperscript{52}.

In countries highly dependent on tobacco as a source of income (such as Malawi and Zimbabwe), economic wants and public health concerns are in conflict\textsuperscript{53,54} and the tobacco industry has tried to prove that the social benefits outweigh the total costs to society. The social benefit per pack was even calculated to be approximately $0.60\textsuperscript{53}.

Smoking has been linked to health-related absenteeism in the workplace. In a retrospective cohort study, involving the military population in Texas, using 87991 subjects, Robbins et al\textsuperscript{55} found that substantial fractions of hospitalisations and lost workdays were attributable to current smoking, particularly among men.

1.7 Legislation

As far back as 1970 the WHO had started to include tobacco use as a priority. In 1978, the WHO already recognised that no single piece of legislation and approach could be used to combat this problem. Recommendations were therefore made available\textsuperscript{24} and they aimed at protecting individuals from environmental tobacco smoke (ETS), the banning of smoking in health related premises, the progressive discouragement of tobacco use (restrictions, price increase and cessation programmes), the placing of health warnings on the packages of tobacco products, health promotion/education, research as well as finding other viable crops for the tobacco growers. Legislation has been directed at these effective methods of reducing tobacco consumption through these
measures. This has led to the use of highly cost effective measures and interventions to decrease tobacco use that some countries including South Africa, and very notably, Canada, are implementing with clear positive results. In South Africa, before the 1990s, the government’s lack of interest in tobacco control led to delays in enacting restrictions. Saloojee, the Executive Director of the National Council Against Smoking in South Africa, criticised the length of time (12 years) between the first serious call in the South African Medical Journal (1963) for a ban of pro-tobacco promotions to the actual stoppage of television adverts (1975), which anyway, was done voluntarily by the tobacco industry. It was to take another 12 years before the first warning on cigarette packets was achieved.

The 1993 Tobacco Control Act and the Tobacco Products Control Amendment Act of 1999 put South Africa in the forefront of tobacco control globally. The 1993 Act was targeted at stopping the sale of tobacco to minors and the prevention of youth access to vending machines, restrictions on smoking in public places and the placing of health warnings on the packages of tobacco products. The 1999 Act banned all tobacco advertising, sponsorships and promotions, and further restricted smoking in public places.

A significant level of success has now however been attained and Saloojee contends that the reduction of smoking prevalence from about 34% in 1993 to approximately 25% in 2000, in South Africa was mainly influenced by dramatic increases in prices due to taxation.
Taxation, especially, and restrictions to smoking in public places, like pubs, restaurants and the workplace have helped reduce cigarette consumption from 1.9 billion to 1.3 billion packets annually⁶¹.

In 2003, the World Health Assembly (WHA) adopted the Framework Convention of Tobacco Control (FCTC)⁶² and it came into effect in February 2005. The FCTC is an international treaty designed to promote measures of tobacco control based on current and relevant scientific, technical and socio-economic considerations.

At the University of the Witwatersrand, there exists a total ban of smoking in all public places. At the medical school the restrictions are even stricter, in that in addition to this restriction, the sale of all tobacco products is totally banned.

1.8 Advocacy

Studies aimed at testing the perceptions of medical students and health personnel concerning aspects of advocacy in tobacco control programs have been carried out in the past by Crofton et al⁶³,⁶⁴. These studies sought to test the levels of support, encouragement and sponsorship that students were willing to give in the future in aspects of tobacco control as well as the smoking habits of the participants. These studies displayed the need for more tobacco-control education, a general willingness by medical students to serve as exemplars by not smoking and to serve as anti-tobacco advocates in the future.

Lantz et al⁶⁵, found that promising public health prevention strategies, conducted in a co-ordinated way to take advantage of potential intersectoral synergies across departments would include aggressive media campaigns, teens’ smoking cessation programmes, socio-environmental changes, community interventions
and the increase of cigarette prices. Doctors’ participation and influences may improve the chances of these measures succeeding even more due to the respect that is accorded to them by members of the society.

Studies have not only assessed prevalence rates but have also revealed a need to educate and incorporate budding health care professionals, especially medical students, in advocacy roles concerning prevention and cessation of tobacco use, rather than the usual practice of treatment and cure of tobacco related diseases. This is due to the unique advantages doctors possess, their general image as role models and the fact that they deal with patients daily, on a one-to-one basis. Doctors are also highly respected as advisers on health issues and with their secure and respectable position in society and are equipped professionally to take up health related issues with decision-makers.

This is important because as revealed in some cases medical education and knowledge of harmful effects of smoking may have a relatively minor impact on smoking and may therefore affect the seriousness with which doctors participate in control programs.

Perceptions of the level of tobacco control support that medical students are willing to give in the future need to be continuously studied using indicators such as those drawn from the 9th Conference on Tobacco and Health held on 10-14 October 1994 in Paris. This strategy includes:

1. Legislation banning advertisements of tobacco products and the protection of youths from these products.
2. Policies that will intensify health education, promotion and the provision of assistance to those using tobacco.

3. Economic policies that include increased taxation on tobacco products and the abolishing of all subsidies for tobacco growers as well as tightening the reigns on tobacco smuggling.

4. Effective health warnings and regulation of tobacco product packaging. This will mean increasing the space used for health warnings and attempting to enact laws that will enforce the sale of cigarettes in a generic package.

5. Policies that will improve regulation and monitoring the tar and nicotine content of cigarettes.

6. Policies that will enforce smoke free public places to protect non-smokers from second hand smoke.

7. Policies that will prevent new marketing strategies by tobacco companies.

8. Surveillance and monitoring of the tobacco pandemic and enforcement of control measures.

Training medical students in tobacco control programmes and increasing their awareness of the dangers of tobacco may improve their individual willingness to participate in cessation, prevention and advocacy programmes. This may very well prove extremely effective in reaching smokers due to the sheer number of patients doctors attend to on a daily basis.

Ferry et al.71 suggest that if all medical schools teach about tobacco control, it will contribute to a decline in tobacco-related mortality and morbidity.
Tobacco-related issues should therefore be emphasised in medical education and doctors should be trained to take leadership roles in tobacco control programs. Training should include knowledge about all aspects including: tobacco-related diseases, passive smoking, benefits of quitting, aspects of oral tobacco and various preventative measures and activities. Crofton and Tessier, in their report stated that “Medical schools should have a clear duty to ensure that students are motivated and equipped to face these responsibilities”\textsuperscript{64}. This thus provides a readily available pool of professionals that will be involved with the provision of primary (preventive), rather than the norm, secondary (attempting to reverse early symptoms) or tertiary (attempting to slow down the progress of a disease) to a large target audience of patients\textsuperscript{72}. There therefore exists, also, an abundance of venues where patient education and treatment can take place.

Richmond et al (1998)\textsuperscript{73} found that 88\% of medical schools around the world include tobacco as a curriculum topic. The course content included knowledge about tobacco related diseases (98\%), its harmful components (71\%), the effects of passive smoking (68\%) and nicotine dependence (64\%)\textsuperscript{64}. It is however generally noted that more work has to be done, especially as only one-third of medical schools actually taught the students about tobacco dependence treatments\textsuperscript{68}.

In Europe generally, and England in particular, Crofton et al (1996) found that 86\% of medical schools had a specific module about tobacco, with 35\% and 55\% integrating tobacco into their teachings, respectively\textsuperscript{74}. 
Intervention by doctors can be directed at: impacting health belief, one-on-one interaction with patients and the critical role of involving organisations, the community and intersectoral collaboration.\(^75\)

Ramstrom et al\(^76\) suggest that doctors themselves stop smoking in order to be more efficient in advising patients to quit. They concur with studies that have shown that doctors who are non-smokers or previous smokers are more willing to advice patients to quit than doctors currently smoking.\(^77,78\) Amos\(^78\) contends that addicted students may not be interested in becoming advocates, interfering with the positive effects that could be obtained judging from the fact that studies have consistently shown that a brief advice by doctors has an effect.\(^79\)

The association between the smoking status of physicians and their willingness to engage in smoking-cessation was examined in a 2002 Japanese survey by Ishii et al\(^80\), which found that more of the ex-smokers reported that their experience of smoking-cessation positively influenced their patient education capabilities when compared to their smoking counterparts.

Aspects of tobacco cessation and control therefore have to be addressed before student health care professionals actually go into practice. Grant et al\(^81\) in two separate studies (1985 and 1989) carried out in Cape Town South Africa examined the attitudes of medical students to smoking and smoking restrictions. Seventy percent of the students agreed that smoking should be banned in public places. There was however a reduced tendency for smokers (55%) to agree on the ban of smoking in public places than non-smokers (85%). Also the 1989
students were more of the opinion that doctors’ smoking habits influenced patients and that doctors should not smoke in front of patients. 

A similar study carried out in Pretoria by Birkholtz et al\textsuperscript{82}, stressed the “massive” effects of tobacco use on all aspects of modern life and advocates that a limiting of the smoking habit from the primary health care point of view will predictably lead to the achievement of phenomenal results in the reduction of prevalence rates and the consequential diminution of pathologies arising from tobacco use. This Pretoria study which was recommended to other medical faculties revealed that medical students perceived themselves as exemplars to their society and sought to determine the prevalence rates of the students as well as their knowledge of the ill-health effects of tobacco and their willingness to advice patients against smoking. 

Hill et al\textsuperscript{83} (Turkey-2004) found that as many as 24% of healthcare students studied have never considered quitting. 

In Tirana Albania, Vakeflliu et al\textsuperscript{84} found that little over 50% of healthcare students were willing to regularly advice their patients to quit. First and fifth year healthcare students were the subjects of this pilot study. Twenty percent of the 1\textsuperscript{st} year students smoked, when compared to 45% of their fifth year counterparts. However, more of the 5\textsuperscript{th} year students were occasional smokers (49.5%) compared with their 3\textsuperscript{rd} year counterparts (29%). The majority believed that smoking should be restricted from the hospital environment. But barriers including: lack of training, structure (time and remuneration), personal factors (smoking status of the doctor), legitimacy (legislation governing anti-tobacco
programmes) and reinforcement (evidence of success) have to be overcome before any straightforward minimum set of rules can be rendered agreeable to doctors, with respect to playing an active role as advocates in tobacco-cessation programmes\textsuperscript{85}.

The necessity of gender equity must however, not be overlooked and is of utmost importance. Policies must ensure that advocates/doctors of both sexes are equally represented. The majority of the involuntary smokers are women and children and tobacco control programs should recognise women as potential leaders and role players\textsuperscript{25}.

In order to help drive policy initiatives, Seffrin J and Saloojee Y of The American Cancer Society (ACS) and The International Union Against Cancer (UICC), respectively, have come up with a complete guide series, which they have offered to colleagues in the global anti-tobacco community\textsuperscript{86}. These include:

1. Strategy planning for tobacco control advocacy.
2. Strategy planning for tobacco control movement building.
3. Strategy planning for engaging doctors in tobacco control.
4. Strategy planning for building public awareness of the health hazards of passive smoking.

They profess to both a new phrase and discipline being learnt, called “public policy advocacy”. The goal of these guide series was to direct support at determining and establishing:

1. What is needed most, now, from advocacy efforts.
2. Who the target audience is.
3. What message the target audience need to hear, right now.

4. How to develop messages that speak to the brain and the heart.

5. Who would be the most effective messengers for the target audience?

6. What would be the most effective medium to reach and deliver the message to the target audience?

7. How to involve the media in the advocacy.

8. How to make sure that the media delivers the message effectively.

1.9 Treatment and benefits of cessation

Cessation will lead to an immediate deceleration and in some cases, the stoppage and/or the reversal of all pathologies attributed to tobacco use. Reducing global exposures to both active and passive tobacco smoke could dramatically reduce mortality from tobacco related causes, within a few years\textsuperscript{85}.

Treatment of addiction to nicotine can be achieved by; advice on quitting, behavioural therapy, the use of pharmacotherapy (nicotine replacement therapy) and bupropion\textsuperscript{87,88,89}.

This could further be broken-down into guidelines for cessation and treatment based on the strategy known as the 5 "A"s; (ask, advice, assess, assist and arrange). These guidelines\textsuperscript{88} will include:

1. Provide a clear anti-tobacco environment on site. Ask if patient smokes.

2. Provide health information.

3. Advise the patient to stop.

4. Suggest strategies for stopping.

5. Suggest strategies for remaining abstinent.

7. Use biofeedback (CO monitor).

8. Offer nicotine replacement therapy.

9. Refer smokers to specialised treatment.

10. Arrange follow-up.

Brigham J\textsuperscript{90} contends that treatment for tobacco dependence does not have to be an expensive and time-consuming process and will only require a clinician asking a patient about his/her tobacco status and offering to help. She however regrets the fact that majority of persons in the helping profession do not know how to offer assistance and are sometimes unwilling to do so.

In an effort to create other treatment solutions and to the consternation of anti-tobacco enthusiasts, a study by Foulds et al\textsuperscript{91} found that “snus” (snuff) availability in Sweden appears to have contributed to the unusually low rates of smoking among Swedish men by helping them transfer to a notably less harmful form of nicotine dependence. According to this study, there appears to be a “harm-reduction” effect, which presents as significant reductions in the incidences of lung cancer and myocardial infarction in Sweden as addicts change from smoking to “snus”. This has led to dismay and debates in certain quarters.

The National Council Against Smoking\textsuperscript{92} in South Africa while encouraging smokers to quit state that upon quitting the former smoker will experience the following:

1. The nicotine is completely eliminated for the body within 2 hours and it takes about 2 days for it’s by products to be removed.
2. The heartbeat slows within 6 hours, blood pressure drops slightly and the blood pressure may return to normal between 3 to 30 days.

1. The former smoker will be less short of breadth and exercise tolerance will improve as carbon monoxide is eliminated from the body and lung efficiency improves within 12 to 24 hours.

2. The sense of smell and taste are improved in 48 hours and the former smoker begins to feel and smell fresher.

3. As cilia begin to recover the former smoker begins to cough up accumulated phlegm for the next few weeks.

4. The lung function and exercise tolerance are greatly improved within 3 weeks as the cilia completely recover.

5. Blood flow to the limbs improves within 3 months and so does the energy level of the individual.

6. Sperm will become more normal and their number will increase.

7. Gradually blood components and cells coating the lungs return to normal and this may take a long time.

8. After a year the risk of coronary heart disease is almost half that of continuing smokers. Within 5 years, the risk of lung cancer is halved.

9. After 15 years the risk of coronary heart disease is almost identical to non-smokers.
1.10 Rationale for the study

Global tobacco use is responsible for about 5 million deaths annually\(^ {21,24} \) and therefore surpasses mortality due to the HIV/AIDS epidemic, which claimed about 2.6 million victims in 1999\(^ {93} \).

Creating an environment whereby doctors speak to the individuals and communities provides a beneficial preventative intervention as opposed to interventions aimed at treating the actual tobacco-related diseases. It must however be put into consideration that the time frames for policy interventions to be deemed effective vary and in some instances, take an often-indeterminable length of time\(^ {94} \).

Assessing medical students’ knowledge about tobacco and its ill health effects, and their attitudes to increased anti-tobacco advocacy roles is of utmost importance because of the numerous links that occur between tobacco and a myriad of conditions that present during the course of medical practice.

Doctors' understanding of these links between tobacco and diseases will increase their diagnostic skills and place them in a better position to advice patients and may manifestly increase their willingness to participate in tobacco-cessation and control programs, which will ultimately lead to decreased incidence rates and the consequent pathologies, mortalities and economic losses associated with tobacco use.

Aspects of this study may serve as not only a baseline, but also a contribution to help determine if aspects of policy change will be acceptable to the target group (medical students).
1.11 Aim

The aim of the study was to assess medical students’ knowledge of, beliefs about, and attitudes to tobacco control measures, and in particular, their role in helping patients to stop smoking. The study also investigated their tobacco use behaviour and if there were differences in beliefs and behaviour between medical students in the 3rd and 5th years of study. The results could provide baseline information for policy initiatives designed to encourage doctors to promote good health practices among their patients.

1.12 Objectives

1. To determine the prevalence of tobacco use among the 3rd and 5th year students of the medical school of the University of the Witwatersrand.

2. To determine the knowledge, beliefs and attitudes of 3rd and 5th year students of the medical school at the University of the Witwatersrand about the adverse health effects of smoking and the restrictions and legislation against tobacco and the role of doctors in tobacco control, particularly, their role in helping patients to stop smoking.

3. To compare the smoking behaviour and perceptions of tobacco control of 3rd and 5th year medical students.