2 METHODOLOGY

2.1 Study site

The study site was the medical school of the University of the Witwatersrand, Johannesburg.

2.2 Study design

A cross sectional survey was conducted targeting all medical students, above the age of 18, in their 3rd and 5th years of study at the University of Witwatersrand. Data was collected in February 2005, using a structured questionnaire (Appendix B) administered by the researcher himself.

2.3 Data collection.

Questionnaires were distributed to all students attending compulsory lectures. Prior permission to administer the questionnaire was obtained from the relevant lecturers. The 5th year students were interviewed during a community health lecture. The 3rd year students were recruited on two separate occasions, firstly, during their course registration and again, a few days later, during a public health lecture. This was so as to cater for the Graduate Entry Medical Programme (GEMP) entrants who had commenced lectures before the rest of the 3rd year class.

At each questionnaire administration session, the purpose of the study was briefly explained to the students. They were also told that participation was voluntary; that they were not required to give their names and that the data was confidential. Students were given sufficient time to complete the questionnaire before and after the lecture. Total student numbers in each year of study was
obtained from the faculty office. The number of students in 3rd year was given as 196, while the number of 5th years was 217. The total number of potential participants was therefore 413.

2.4 Measurement

This study used a modified form of the Global Health Professional Survey, a self-administered questionnaire developed by the World Health Organization in collaboration with the United States Centre for Diseases Control\textsuperscript{19}. Many aspects of the study by Velicier et al (US)\textsuperscript{95} and a similar study by Cooper et al (Turkey)\textsuperscript{96} were also put into consideration in the design of this study and its questionnaire. This standardised survey instrument aims to monitor and document the prevalence of tobacco use among health professionals and medical students, respectively, assesses their knowledge, beliefs and attitudes to health aspects of tobacco and tobacco control policies. This questionnaire was slightly modified and shortened to make it more suitable for use in South Africa. The questionnaire was self-administered.

The first section of the questionnaire (questions 1 to 4) was made up of basic demographic questions (race, year of study, gender and age). The next section addressed personal smoking behaviour (questions 5 to 9). These included questions on current tobacco use, when a smoker started or quit smoking and friends’ smoking habits. The final section (three) consisted of 28 questions that assessed knowledge of, beliefs about and attitudes towards the adverse affects of smoking, the role of health professionals regarding smoking cessation of their patients, and some policy issues on smoking. Responses in the final section
were graded on a 5-point Likert scale in order to give the respondents adequate latitude to demonstrate their beliefs.

Items on the questionnaire were close-ended except questions one (age) and eleven (knowledge of treatment), which were open-ended.

Responses to question 11 were assessed and categorised into 4 groups; “No Knowledge”, “Some idea”, “Good knowledge”, and “Very good knowledge”.

Responses were critically evaluated and scored according to students who mentioned aspects of treatment and cessation techniques in varying ways based on: 78,87,88

1. Behavioural therapy.
2. Nicotine replacement therapy.

Responses were thus graded:

i. Questionnaires with empty responses or responses that did not fall into any of these categories were scored as “0” and graded as “No knowledge”.

ii. Responses containing up to 1 aspect of the treatments were scored “1” and graded as “Some idea”.

iii. Those who mentioned up to 2 aspects of current cessation procedures were scored “2” and graded as “Good knowledge”.

iv. Participants who mentioned the 3 aspects of the cessation techniques listed above were scored “3” and graded as “Very good knowledge”.
2.5 The pilot

The questionnaire was pilot-tested in September 2004 on thirty medical students who were not part of the target population to determine the precision of the questions and the length of time needed for questionnaire completion, which was found to be approximately five minutes.

2.6 Quality control

Completing of the questionnaire was of utmost importance. The questionnaires were administered on a one-on-one basis and collected in a similar manner. Each questionnaire was individually checked for completeness and the student informed immediately. This was done, by the researcher quickly going over the questionnaire and appealing to the respondent to fill in any gaps noted, if they had forgotten to do so. There were no cases of any student being sensitised negatively by any questions and the students promptly completed their questionnaires or declared “no knowledge”, with respect to unanswered questions. There was a high level of co-operation.

2.7 Data analysis

All data were coded manually, entered into Microsoft Excel for management and analysed using Stata 9, Epi-Info version 6 and Microsoft Excel (for graphs) statistical software. Statistical techniques employed included both descriptive and analytical statistics.

The association between groups was measured using the Chi-square test and the Fischer exact test (FET) when the expected numbers of subjects in the cells were less than $5^{96}$. The Chi-square test assumes that each cell has an expected
frequency of five or more, but the Fisher exact test has no such assumption and can be used regardless of how small the expected frequency is. The two tail probabilities (p-value of 5%) were used to determine statistical significance. The Fisher exact test is useful when samples are small as it does not depend on approximations like the likelihood ratio chi-square tests and the Pearson’s Product Moment100, which are better suited for large samples.

Binary logistic regression and odds ratio calculations were performed to test for significance in the 2 X 2 tables. In the 2 X N tables (where N > 2), that either the Chi square test and the Fischer exact test were to be performed, the occurrence of non-representations in the cells that prevented computation (due to the lack of opportunities for pair-wise comparisons) led to the collapse of the tables and the use of logistic regression and odds ratio for statistical calculations.

The confidence limits and the p-values (5%) were used to confirm statistical significance.

2.8 Ethical considerations

All the study participants were contacted within the premises of the study site (The University of the Witwatersrand School of Medicine) and none was contacted outside these premises.

The participants were approached politely and introduced to the study using the information sheet (APPENDIX A). The students were informed that participation was voluntary, anonymous and confidential. The students were verbally asked to demonstrate their willingness to participate.
This study received ethical approval clearance from the Committee for Research on Human Subjects (CRHS) of the University of the Witwatersrand (APPENDIX C). The study satisfied requirements for ethical approval including:

1. The permission to administer questionnaires to participants above the age of 18 years (adulthood) without parental supervision.
2. The researcher providing both verbal and written statements related to voluntary participation.
3. The researcher obtaining consent from all the respondents.
4. The anonymity of the respondents was maintained.
5. The absence of any form of risk to the respondents who participated in the study.