

# The smoking habits, attitudes towards smoking and knowledge regarding anti-smoking legislation of students in institutions of higher learning in the Eastern Cape Province of South Africa

**Awotedu AA**, FMCP (Nig), FCCP, FCP (SA-PR),

Department of Internal Medicine, Walter Sisulu University, Mthatha

**Jordaan ER**, MSc, Biostatistics Unit, Medical Research Council of South Africa, Tygerberg

**Ndukwana OZB**, BACur, BACurHons (UNISA), MPH, Department of Health Promotion, Walter Sisulu University, Mthatha

**Fipaza NO**, BSc, MSc(Leeds), Department of Health Promotion, Walter Sisulu University, Mthatha

**Awotedu KO**, BSc Hon, MBBS, FMCGP (Nig), Department of Physiology, Walter Sisulu University, Mthatha

**Martinez J**, MD (Havana), Department of Community Medicine, Walter Sisulu University, Mthatha.

**Foyaca-Sibat H**, MD (Havana), Department of Internal Medicine, Walter Sisulu University, Mthatha

**Mashiyi MK**, MBChB; FCP (SA), Department of Internal Medicine, Walter Sisulu University, Mthatha

**Correspondence to:** Professor AA Awotedu, e-mail: [awotedu@worldonline.co.za](mailto:awotedu@worldonline.co.za)

## Abstract

### Background

The study aimed to i) investigate the smoking habits of students attending tertiary institutions of learning in the Eastern Cape Province (ECP) and ii) determine the knowledge of the students about the health hazards of smoking and their attitude towards current government anti-smoking legislation.

### Methods

This was a questionnaire-based study involving all seven tertiary institutions of learning in the ECP, viz. the Universities of Transkei, Fort Hare, Port Elizabeth and Rhodes University, and the Border, Eastern Cape and Port Elizabeth technikons. A total of 1 728 students were interviewed out of a student population of 30,080. Stratified random sampling was used to select the students. Two-way tables were used to test the independence of the variables and chi-square tests were applied. A 'p' value of below 5% was used as a test of significance.

### Results

A total of 1 480 students completed the questionnaires (86%). The racial classification of the respondents was 79% Black, 13% White, 7% Coloured and 2% Indian. Twenty-six per cent of the students were smokers, of which 37% were male and 15% were female. Forty-five per cent of the Coloured students smoked, while the figures for Whites and Blacks were 26% and 25% respectively. Seventy per cent of the students smoked less than 10 cigarettes a day. Fifty-two per cent of the smokers said they wanted to stop smoking. Sixty-one per cent had been influenced to start smoking by their friends and only 13% were influenced by advertisements. Ninety-four per cent agreed that smoking was dangerous to the smoker's health, while 73% responded that there was a relationship between mothers who smoke and low birth weight. Thirteen per cent thought the legislation was too tough, while 30% said it was good as it was. On measures to reduce smoking, 86% favoured restricting smoking in public places.

### Conclusion

This study has demonstrated that smoking is prevalent in tertiary institutions of learning in the Eastern Cape Province. The demographic profile of the smokers reflects the national picture. The knowledge of the harmful effects of smoking is generally good.

**SA Fam Pract 2006;48(9):14**

## Introduction

Smoking, a manmade epidemic, occurs all over the world and is accompanied by a host of diseases that threaten the health and shorten the life of the consumer.<sup>1</sup> The World Health Organization (WHO) estimates that, globally, 47% of men and 12% of women smoke, with about 4.9 million people dying each year as a consequence of smoking.<sup>2</sup> This figure is expected to rise to 10 million deaths by 2030 if the present trend continues.<sup>2</sup> Prevalence rates and trends vary from country to country, often dependent on the level of monitoring of tobacco use behaviour. While the rate of cigarette smoking is decreasing in the developed economies, the reverse is happening in the Third World and in Africa in particular. Two decades ago, cigarette smoking in Africa was referred to as 'the coming epidemic'.<sup>3</sup> This 'prophesy' has been confirmed, as many countries on the continent are now in the middle of the epidemic. The situation on the continent has been characterised by rising consumption and a corresponding increasing prevalence of tobacco-related diseases. The available information shows that the prevalence of smoking in African countries ranges from 17% to 32%.<sup>4,5,6,7</sup>

There is a view that Africa was targeted by the tobacco industries because there was little control of tobacco advertising. Tobacco advertisements are widespread and uncontrolled in most African countries except Sudan and Mozambique, where there is a total ban on such advertising.<sup>8</sup> Most African governments turn a blind eye because of the revenue generated from tobacco, forgetting the enormous burden of cigarette-related diseases on the health budgets. In most African countries where there is no control over cigarette manufacture, the tobacco companies manufacture low-quality cigarettes that would not be sold in Europe and North America.<sup>9</sup> In their 1996 report on smoking in South Africa, Reddy et al. state that the prevalence of smoking had increased by 1% per annum from 1992, with the result that 34% of adult South Africans were smoking by 1996.<sup>10</sup> The prevalence of smoking in South Africa varies in the different population groups, with rates of 49% in the Coloured population, 37% in Whites, 28% in Indians and 23% in Blacks.<sup>3</sup> However, recent information suggests that the prevalence of smoking in South Africa is falling, except in the Coloured community.<sup>11</sup> The relatively low smoking prevalence among Black South Africans as a group

and women in particular may suggest that the tobacco industry has been unsuccessful in penetrating these markets.<sup>11</sup> Through its tough anti-tobacco legislation enacted in 1995, 1999 and 2001, South Africa is at the forefront of the global anti-cigarette smoking campaign, with other countries on the continent following its example. It is expected that the aggressive stand of government on smoking will result in a reduction in smoking. The loss of revenue from tobacco advertising will eventually be balanced by the lowering of the costs of treating smoking-related diseases. Although there are many studies on tobacco use in South Africa, there is little information available on smoking in the Eastern Cape Province in general and amongst students in particular. This study was therefore undertaken to address this lack of information.

## Aims and objectives

The aims and objectives of this study were:

1. To investigate the prevalence of smoking among students attending institutions of higher learning in the Eastern Cape province.
2. To investigate the prevalence of tobacco use and the psychosocial determinants of this behaviour amongst the students.
3. To determine if there are any differences in the knowledge of the health hazards of smoking among the students on the basis of the institution of learning and the course of study.
4. To determine the attitude of the students towards government anti-smoking legislation.

## Methodology

This was a descriptive, cross-sectional survey. The population surveyed consisted of students attending four universities (the Universities of Fort Hare, Port Elizabeth, Transkei and Rhodes University) and three technikons (Border, Eastern Cape and Port Elizabeth) in the Eastern Cape. The total population of students in these institutions was 32 070

in 2001, when the study was conducted. Stratified random sampling was used, with seven strata (as mentioned above). The sampling units were classes in three of the courses offered: science, arts and commerce. A total of 1 728 students were selected to be interviewed. A sample size of 1 728 students allowed for a 25% average smoking rate, a 10% error rate, with 95% confidence intervals. The questionnaires were administered and collected at the same sitting. Confidentiality was ensured by non-inclusion of names on the forms. The questionnaire was designed to answer the core questions enumerated in the aims and objectives. The questionnaire was subjected to a pilot survey and the final form was adapted and refined on the basis of the results of the pilot study.

Because some of the institutions were merged during the study period, post-weights were allocated for the analysis of the sampling units. The appropriate weights for the study design were used to estimate the prevalence and 95% confidence intervals given in the tables. The University of Port Elizabeth and the Port Elizabeth Technikon merged to become the Nelson Mandela Metropolitan University. The University of Transkei, Border Technikon and the Eastern Cape Technikon merged to become Walter Sisulu University of Technology and Science. Rhodes University and the University of Fort Hare remained as they were. The Coloured and Indian students were grouped together in this study because the number of Indian students was too small for analysis. Two-way tables were used to test for the independence of any two variables. To account for the survey design, the F statistic was used to test for independence and the calculated p value can be interpreted in the usual way, with a value below 5% being interpreted as a significant value.

Ethical approval was obtained from the ethics committee of the faculty of health sciences, University of Transkei before the study was conducted. Institutional approval was obtained from the relevant authorities, while informed

**Table 1: Distribution of the sample of respondents by institutions**

Institution	Sample number	Student population	Sampling rate
UNITRA	408	4 200	9.7
Rhodes Uni.	167	5 300	4.7
UPE	237	5 800	3.2
Uni. Fort Hare	137	4 400	4.1
PE Tech.	219	4 650	3.1
Border Tech.	213	3 400	6.3
Eastern Cape T	99	4 320	2.3
TOTAL	1 480	32 070	4.6

consent was also obtained from each participant.

### Results

Four universities and three technikons were used in this study. The size of the student population is indicated in Table I. A total of 1 480 students, representing 86% of the selected sample, completed the questionnaire.

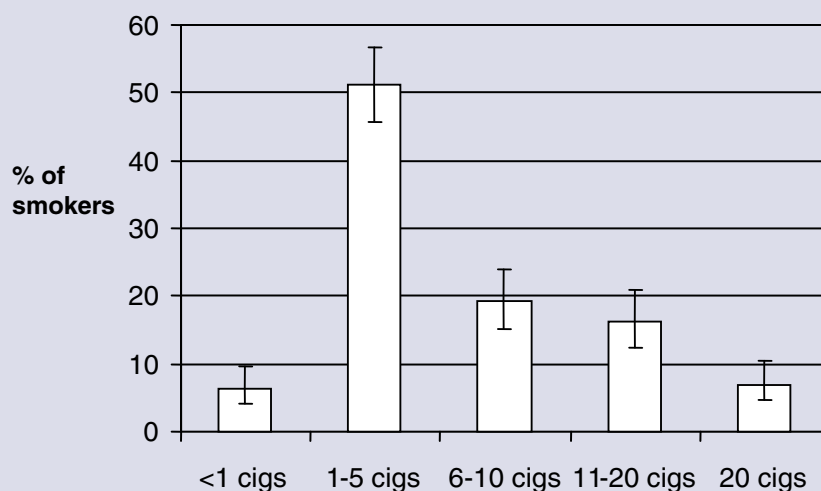
### Socio-demographic characteristics of the respondents:

The ages of the respondents ranged from 16 to 42 years, with 80% of the students being between 16 and 25 years old. Fifty-two per cent of the students were male and 48% were female. The racial composition of the respondents was 79% Black, 13% White, 7% Coloured and 2% Asian/Indian. A total of 92% of the students had no income or an income below R1 000 a month. About one-third of the respondents were in their first academic year of study, another third in their second year, and the rest were in their third year of study or above.

### Smoking habits of respondents

Table II shows the smoking habits by race and sex. A total of 26% of the students were smokers, and 72% of these smoked daily. More male (37%) than female (15%) students smoked. The racial distribution of students who smoked showed that Coloureds students constituted almost half (45%) of the total smoking population, with 49% of Coloured males and 40% of Coloured females reporting to be smokers. The White students represented 26% of the smokers, made up of 30%

Figure 1. Daily cigarette consumption by smokers



of the males and 24% of the females. Black students who are smokers made up 25% of the total number of smokers, and 37% of the males and 10% of the females in this population smoke.

Figure 1 shows the daily cigarette consumption of the smokers: 51% smoked one to five cigarettes daily, 19% smoked six to 10 cigarettes daily, 16% smoked 11 to 20 cigarettes daily, while 7% smoked more than 20 cigarettes daily. Eighty-two per cent of the smokers started smoking before entering the tertiary institution, 9% started in the year they entered and 9% started after their first year.

When the smokers were asked what influenced them to start smoking, 61% attributed their current smoking habits to influence by their friends, 13% felt they were influenced by advertisements, 12% said it was due to boredom, 7%

blamed curiosity and 8% did not know.

Asked about the perceived benefits of smoking, the response was as follows: 42% said it improved concentration, 19% said it 'calmed their nerves', 9% said it made them less shy, 8% felt it made them more acceptable and 22% did not know.

A total of 52% of the smokers wanted to stop smoking and 57% had tried to stop smoking. Of these, 25% had tried one to two times, 11% had tried three times and 17% had tried four or more times.

### Knowledge of health hazards of smoking

The study also addressed the question of the knowledge of the students regarding the effects of cigarette smoking. Table III shows the response of respondents to questions on some of the adverse health implications of cigarette smoking. Ninety-four per cent of the respondents agreed that smoking was harmful to the smoker's health and 58% agreed that it was also harmful even if the smoker did not smoke heavily. A total of 87% of the respondents agreed that smoking was also harmful to the health of non-smokers. When asked if there was proof that smoking causes cancer and diseases of the heart and lung, 70% gave a positive response. Eighty-nine per cent knew that an unborn baby's health was affected by the mother's smoking, while 73% also knew that there was a relationship between mothers who smoke and low birth weight.

### Attitude to anti-smoking legislation

The attitude of the students towards smoking and government legislative

Table II: Smoking habit by race and sex

	Percentage of tobacco use			
	Blacks	Whites	Coloured	Total
Current smokers	24.6 21.9-27.5	26.4 20.2-33.6	45.4 36.2-45.1	26.2 24.1-29.2
Female smokers	10.3 7.6-13.7	24.1 16.7-33.6	40.4 28.4-53.7	15.3 12.5-18.5
Male smokers	36.7 32.5-41.1	29.7 19.9-41.9	49.1 35.6-37.2	37.0 33.2-41.0

Table III: Knowledge about the dangers of cigarette smoking

Questions	Percentage with positive response
Smoke harmful to smoker's health	93.0 (91.4-94.3)
Also harmful if you don't smoke heavily	57.7 (54.9-60.4)
Harmful to non-smoker's health	86.8 (84.8-88.6)
Proof that smoking causes cancer, heart, lung disease	72.0 (69.4-74.5)
Is the unborn baby's health affected by the mother's smoking?	88.9 (87.0-90.5)
Is there any relationship between mothers who smoke and low birth weight?	73.1 (70.5-75.4)

measures to curb smoking in public places was also elicited. In Table IV when the students were asked about the government anti-smoking legislation, 13% said the current legislation was "too harsh", 34% said it was "not tough enough", 30% said it was "good as it is", while 23% either had no opinion or were not aware of the legislation. Sixty-nine per cent agreed that increasing taxes on all tobacco products would reduce the prevalence of smoking. When asked if smoking should be regulated on campus, 65% agreed. When asked whether it was not worthwhile to stop smoking, 71% disagreed with the statement implying that they agreed that it was worthwhile to stop smoking.

#### **Perceptions on strategies to reducing smoking**

Table V refers to opinions of the students about how to reduce smoking. Sixty-three percent of the respondents felt that there should be a complete ban on advertising. Eighty-six per cent agreed that smoking should be restricted in public places and 87% also agreed that smoking should be restricted in the workplace. A total of 87% said cigarette sales to children younger than 16 should be prohibited. Eighty-three per cent said mass campaigns should be stepped up and 77% agreed that there should be compulsory school programmes on smoking and the associated dangers. A total of 47% of the respondents agreed with all the above

measures enumerated in the questionnaire on how to reduce smoking.

#### **Discussion**

The results of our study showed an overall smoking prevalence of 26%, which is similar to the 25.7% reported among tertiary students in a report in 2000.<sup>11</sup> Generally, the highest smoking prevalence is among Coloureds students when compared to other racial groups in South Africa. We found a prevalence of 45% in the Coloured population, which was slightly lower than the 49% reported in 2000. The corresponding smoking prevalence figures from our study for the other racial groups when compared to the 2000 report are as follows: Whites in our study comprised 26% compared to 37% in 2000, and Blacks in our study comprised 25% against 22.7% in 2000.<sup>11</sup> However, a South African study by Peltzer in 2001, involving Black students at the University of the North, found a smoking prevalence rate of 15% in males and 1% in females.<sup>12</sup> These figures are much lower than for our Black students. The reason for this difference may be that, in our study, seven institutions with a relatively more heterogeneous population distribution participated, as against the single institution with a predominantly Black population surveyed by Peltzer. We found slightly more males than females smoke among the White and Coloured students, but among the Black students the male to female ratio was 3.5:

1. A low female smoking rate compared to their male counterparts has been reported in other studies in Africa.<sup>13,14</sup> The narrowing of the gender gap amongst the Coloured, Asian and White students is consistent with international experience.

The smoking rate is also higher in the higher income group, with 42% of those earning more than R1 000 a month smoking compared to 23% in the income group earning less than R1 000 a month. The lack of disposable income, combined with rising cigarette prices, has been noted to offset peer pressure in smoking cessation.<sup>15</sup> Only 57% of smokers in our survey tried to stop smoking, which is lower than the 67% of respondents in a Cape Peninsula study.<sup>16</sup>

An institutional analysis showed higher than average smoking rates at Rhodes University and the Eastern Cape Technikon, with 32% and 37% respectively. Lower than average rates were recorded for the University of Port Elizabeth (19%) and Border Technikon (15%). It is difficult to explain this observation, and these differences may serve as an area for future research.

The results of this study also show that opinions on smoking less are related to gender and race and, to a lesser extent, to income. Females and Blacks are generally more in favour of restrictions on smoking. Students with no income are more in favour of restrictions on smoking. It is worth noting that 63% of the students were in favour of a complete ban on cigarette advertising, while a study that was done a decade earlier among adult South Africans showed that 59% were in favour of such a measure.<sup>12</sup>

The knowledge of the respondents about the harmful effects of smoking is generally very good, except that only 60% of them realised that any smoking, regardless of consumption, is bad for your health. Seventy per cent of the students in our study associated smoking with cancer and heart disease, compared with the 16% of the students indicated in the study by Peltzer.<sup>12</sup> However the same study also found that 93% of the students associated smoking with lung cancer.<sup>12</sup>

The gradual decrease in smoking prevalence in South Africa over the past five years is a welcome development. In a study by Van Walbeek, it was reported that, in South Africa, a 10% increase in the real price of cigarettes decreases cigarette consumption by 6 to 8%.<sup>17</sup> It has been postulated that, with

**Table IV: Attitudes of respondents towards smoking**

Questions	Response	Percentage
Not worth stopping smoking	Disagree	70.6 (68.0-73.2)
Present government legislation	Too harsh	13.2 (11.4-15.2)
	Not tough enough	33.8 (31.2-36.5)
	No opinion/not aware	22.9 (20.6-25.3)
	Good as it is	30.1 (27.6-32.8)
Increase taxes on all tobacco Products	Agree	68.7 (66.0-71.3)
Regulate smoking on campus	Agree	65.1 (62.4-67.7)

**Table V: Opinion of respondents on how to reduce smoking**

Questions	Percentage with positive response
Complete ban on advertising	62.9 (60.2-65.6)
Price increase	74.2 (71.6-76.6)
Restrict smoking in public places	85.9 (83.8-87.7)
Prohibit sale to those < 16 years	86.6 (84.5-88.4)
Restrict smoking in workplace	86.8 (84.8-88.6)
Step up mass campaign	82.5 (80.3-84.6)
Compulsory school programme	77.2 (74.7-79.5)
All seven actions	45.6 (42.8-48.4)
Six or more actions	64.2 (61.4-66.8)

the continued decrease in the smoking population, smoking in South Africa could be something of the past by the middle of the 21<sup>st</sup> century.<sup>11</sup> There is no doubt that the tough anti-smoking legislation and regular increase in the price of tobacco products contribute to this trend.

#### Acknowledgements

The authors wish to thank the South African Medical Research Council, which funded this study.

#### References

- World Health Organization. Tobacco and the rights of the child. WHO: Geneva; 2001.
- Peto R, Smoking and death: the past 40 years and the next 40. *BMJ* 1994;309:937-939
- Taha A, Ball K. Smoking in Africa: the coming epidemic. *World Smoking Health* 1982;7(2):25-30.
- Youssef RM, Abou-Khatwa SA, Fouad HM. Prevalence of smoking and age of initiation in Alexandria, Egypt. *East Mediterr Health J* 2002;8(4-5):626-37.
- Koffi N, Kouassi B, Horo K, et al. Smoking in the African setting (Abidjan, Ivory Coast): patient knowledge, attitude and behaviour. *Rev Pneumol Clin* 2004;60(4):217-22.
- Mpabulungi L, Muula AS. Tobacco use among high school students in Kampala, Uganda. *Croatian Medical Journal* 2004;45(1):80-3.
- Kwamanga DH, Odhiambo JA, Amukoye EI. Prevalence and risk factors of smoking among secondary school students in Nairobi. *East Afr Med J* 2003;80:207-12.
- Chapman S, Yach D, Saloojee Y, Simpson D. All Africa Conference on Tobacco Control. *BMJ* 1994;308:189-91.
- Awotedu AA, Higenbottam TW, Onadeko BO. Tar, nicotine and carbon monoxide yields of some Nigerian cigarettes. *J Epid and Community Health* 1983;37:218-20.
- Reddy P, Meyer-Weitz A, Yach D. Smoking status, knowledge of health effects and attitudes towards smoking control in South Africa. *S Afr Med J* 1996;86:1389-93.
- Van Walbeek CP. Recent trends in smoking prevalence in South Africa: some evidence from AMPS data. *S Afr Med J* 2002;92:468-72.
- Peltzer K. Tobacco use among Black South African university students: attitudes, risk awareness and health locus control. *Curationis* 2001;24(2):4-8.
- Onadeko BO, Awotedu AA, Onadeko MO. Smoking patterns in students of higher institutions of learning in Nigeria. *Afr J Med Sci* 1987;16:9-11.
- Waldron I, Bratelli G, Carriker L, Sung WC, Vogeli C, Waldman E. Gender differences in tobacco use in Africa, Asia, the Pacific and Latin America. *Soc Sci Med* 1988;27(11):1269-75.
- Van Walbeek CP. Impact of the recent tobacco excise tax increases on future government revenue potential. Occasional Paper. Cape Town: Applied Fiscal Research Centre (UCT); 2000.
- Flisher AJ, Ziervogel CF, Chalton DO, Leger PH, Robertson BA. Risk-taking behaviour of Cape Peninsula high school students: Parts 1 to 5. *S Afr Med J* 1993;83:469-85.
- Van Walbeek C. Tobacco control in South Africa. *Promt Educ* 2005;suppl 4:25-8.