

https://dspace.org/

The use of tobacco in Johannesburg high school youth

Goldstein, Susan, Jane

1996-03-28
https://hdl.handle.net/10539/24626

Downloaded from a DSpace repository. https://dspace.org/

THE USE OF TOBACCO IN JOHANNESBURG HIGH SCHOOL YOUTH

Susan Jane Goldstein

A research report submitted to the Faculty of Medicine, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Medicine in the branch of Community Health.

March 1996

Declaration

I, Susan Jane Goldstein declare that this research report is my own work. It is being submitted for the degree of M Med.(Community Health) in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

Ethics Committee for Research on Human Subjects(Medical) Clearance certificate number: M 940304 Ref: R14/49 Goldstein.

Signed ----------

---28th--- day of ---March---, 1996

Dedication

To my husband David, and my children, Kate, Jan and Nicki. I really appreciate the time and support you have given me throughout this process.

ABSTRACT

THE USE OF TOBACCO IN JOHANNESBURG HIGH SCHOOL YOUTH

Tobacco is a major cause of morbidity and mortality world-wide. Smoking rates in South Africa have been increasing over the past decade. The promotion of health by targeting anti smoking campaigns at school going children is a common strategy throughout the world. The aim of this study was to examines the extent and nature of cigarette smoking in high schools in Greater Johannesburg in 1994, in order to inform health promotion programmes dealing with tobacco control.

A cross sectional analytical study was conducted in high schools in the Greater Johannesburg area. The study had both qualitative and quantitative components, using self administered questionnaires and focus group discussions.

Forty one percent of students had tried smoking, and 12% were regular smokers. Multivariate analysis found the following factors independently significantly associated with ever having smoked: friends smoking (OR: 3.52, 95% CI 2.62, 4.73), being 18 years or older (OR: 1.67, 95% CI 1.11, 2.51), being in standard 9 (OR: 1.60, 95% CI 1.04,2.46), not feeling close to one's parents (OR: 1.55, 95% CI 1.21,1.97) and being male (OR: 1.35, 95% CI 1.07, 1.70). Going to a school in Soweto or a private school was protective against ever having smoked. (OR: 0.60, CI 0.44, 0.83) and (OR: 0.65, CI 0.45, 0.94). Regular smoking was significantly associated with friends smoking (OR: 3.43, CI 1.97,5.97), being 18 years or older (OR: 2.24, CI 1.13, 4.44), not feeling close to one's parents (OR: 2.05, CI 1.4, 2.99), and coming from a school in the stratum made up of "coloured" students (OR: 2.09, CI 1.32, 3.33).

The rates of smoking in high schools in Greater Johannesburg are not as high as those in Cape Town and present a window of opportunity to health promoters to prevent young students from starting smoking.

Acknowledgements

I would like to thank the following people without whom this research report would not have been possible:

My supervisor Professor William Pick for his tireless support and encouragement, and for sparking the quest for academic excellence.

The Community Health Department of the Greater Johannesburg Council for the time and support everyone gave me, especially Dr Eric Buch, and Magda De Beer.

Soul City for the emotional support throughout the writing process.

The Department of Education, Gauteng for their prompt interest and permission to conduct the study.

All the school principals who helped me so willingly.

All the students who participated in the study - your youthful exuberance inspired me.

THE USE OF TOBACCO IN JOHANNESBURG HIGH SCHOOL YOUTH 5

1. INTRODUCTION 5

1.1 Global Tobacco Consumption 5

1.2 Tobacco consumption in Africa 7

1.3 The Consumption of Tobacco in South Africa 8

1.4 The Health effects of Tobacco 10
Cancers: 10
Lung diseases 10
Cardiovascular disease 11
Other diseases 11
Passive smoking 11

1.5 Health Promotion and Tobacco 12

1.6 Youth and Tobacco 14

1.7 Youth and Prevention 16

1.8 Race, Gender and Tobacco 18

1.9 Aim 20

1.10 Objectives 20

2. METHODOLOGY 21

2.1 Study Population 21

2.2 Qualitative Phase 23
2.2.1 Qualitative Analysis 24

2.3 Quantitative Phase 24
2.3.1 Sample size 24
2.3.2 The Instrument 25

2.4 Analysis 25

2.5 Limitations 26

3. RESULTS 27

3.1 Qualitative Results 27

3.1.1 General Impressions 27
3.1.2 Why People Take Substances 29
3.1.3 Peer Pressure 30
3.1.3 Access to Substances 30
3.1.4 Negative Effects 31
3.1.5 Influences and Information 31
3.1.6. Whom Do You Turn to With a Problem? 33

3.2 Quantitative Results - Description of the Sample **33**
Age 36
Sex 36
Language 37
Standard 37
Social Class 37

3.3 The Extent of Use of Tobacco **38**

3.4 Other Factors Influencing the Use of Tobacco in High Schools **45**
Family Influences 45
Peer Pressure 49

3.5 Smoking and the Use of Other Substances **52**

3.6 The Differences Between the Strata **62**
Family Type 65
Relationship with Parents 66

3.7 Multivariate Analysis **69**
Ever Having Smoked 69
Regular Smoking 70

4. DISCUSSION **71**

4.1. Demographics of Tobacco Use in High Schools in Johannesburg **71**
4.1.2 Gender 73
4.1.3 Race 76

4.2 Peer Pressure **78**

4.5 Other Social Risk Factors Influencing Smoking in Greater Johannesburg Schools **80**
4.5.1 Family disorganisation 80

4.4 Tobacco use and the use of other substances **82**

4.5 Implications for Health Promotion and Recommendations **83**
4.5.1 Healthy Public Policy 83
4.5.2 Creating Supportive Environments 85
4.5.3 Developing Personal Skills 86
4.5.4 Supporting Community Action 87
4.5.5 Reorienting the Health Services. 87

5. CONCLUSION **89**

Appendix 1 95
Focus Group Guide Used in This Study 95

Appendix 2 97
Self Administered Questionnaire Used in This Study 97

TABLE 1: TOTAL WORLD CONSUMPTION OF TOBACCO 5
TABLE 2: MORBIDITY AND MORTALITY FROM 1000 ADDED TONS OF TOBACCO CONSUMPTION 6
6
TABLE 3: DEMOGRAPHICS OF THE SAMPLE 35
TABLE 4: AGE DIFFERENCES OF THE STRATA 36
TABLE 5: OVERALL USE OF TOBACCO 38
TABLE 6: AGE AND EVER HAVING SMOKED 39
TABLE 7: AGE AND REGULAR SMOKING 39
TABLE 8: STANDARD AND EVER HAVING SMOKED 41
TABLE 9: STANDARD AND REGULAR SMOKING 42
TABLE 11: STANDARDS 6 , 7 AND 8: REGULAR SMOKING 42
TABLE 12: SEX AND EVER HAVING SMOKED 43
TABLE 13: SEX AND REGULAR SMOKING 44
TABLE 14: SOCIAL CLASS AND EVER HAVING SMOKED 44
TABLE 15: SOCIAL CLASS AND REGULAR SMOKING 45
TABLE 16: FAMILY TYPE AND EVER HAVING SMOKED 46
TABLE 17: FAMILY TYPE AND REGULAR SMOKING 46
TABLE 18: ADULT SMOKER IN HOME AND EVER HAVING SMOKED 47
TABLE 19: ADULT SMOKER IN HOME AND REGULAR SMOKING 47
TABLE 20: BEING CLOSE TO PARENTS AND EVER HAVING SMOKED 48
TABLE 21: BEING CLOSE TO PARENTS AND REGULAR SMOKING 49
TABLE 22: FRIENDS SMOKING AND EVER HAVING SMOKED 50
TABLE 23: FRIENDS SMOKING AND REGULAR SMOKING 50
TABLE 24: FRIENDS SMOKING AND USE OF ALCOHOL 51
TABLE 25: FRIENDS SMOKING AND BINGE DRINKING 52
TABLE 26: EVER HAVING SMOKED AND USE OF ALCOHOL 53
TABLE 27: EVER HAVING SMOKED AND BINGE DRINKING 53
TABLE 28: REGULAR SMOKING AND USE OF ALCOHOL 54
TABLE 29: REGULAR SMOKING AND BINGE DRINKING 55
TABLE 30: EVER HAVING SMOKED AND USE OF DAGGA 56
TABLE 31: EVER HAVING SMOKED AND REGULAR USE OF DAGGA 56
TABLE 32: REGULAR SMOKING AND EVER HAVING USED DAGGA 57
TABLE 33: REGULAR SMOKING AND REGULAR USE OF DAGGA 58
TABLE 34: EVER HAVING SMOKED AND SNIFFING SOLVENTS 58
TABLE 35: REGULAR SMOKING AND SNIFFING SOLVENTS 59
TABLE 36: REGULAR SMOKING AND REGULAR SNIFFING OF SOLVENTS 60
TABLE 37: EVER HAVING SMOKED AND USING MANDRAX 61
TABLE 38: EVER HAVING SMOKED AND USING OTHER DRUGS 61
TABLE 39: EVER HAVING SMOKED AND STRATA 63
TABLE 40: REGULAR SMOKING AND STRATA 64
TABLE 41: REGULAR SMOKING AND STRATA (MALES ONLY) 64
TABLE 42: REGULAR SMOKING AND STRATA (FEMALES ONLY) 65
TABLE 43: FAMILY TYPE AND STRATA 65
TABLE 44: BEING CLOSE TO ONE'S PARENTS AND STRATA 66
TABLE 45: ADULT SMOKING AND STRATA 68
TABLE 46: FRIENDS SMOKE AND STRATA 68
TABLE 47: FACTORS ASSOCIATED WITH EVER HAVING SMOKED 69
TABLE 48: FACTORS ASSOCIATED WITH REGULAR SMOKING 70

THE USE OF TOBACCO IN JOHANNESBURG HIGH SCHOOL YOUTH

1. INTRODUCTION

1.1 Global Tobacco Consumption

There are over 1 billion smokers in the world today. If current global smoking patterns continue then about half a billion people who are currently alive will be killed by tobacco, and about 250 million of them will die in middle age. At present the burden of tobacco deaths is borne by developed countries, but with the decline in smoking rates in these countries, the North Americas more specifically, and the rising rates in developing countries, it is expected that 70% of tobacco related deaths will occur in the latter by the year 2010[1, 2,3]

The global consumption of tobacco is illustrated in Table 1:

TABLE 1: TOTAL WORLD CONSUMPTION OF TOBACCO

(Thousands of tons dry weight)

Region	*1975*	*1985*	*1995*
Developing	2300	3700	5000
Africa	100	150	200
Developed	2400	2300	2300
World	4700	6000	7300

source: FAO

The increase in morbidity and mortality has been calculated for each new thousand tons of tobacco consumed on a global basis. The global mortality and morbidity per added thousand tons of tobacco as estimated by Howard Barnum is illustrated in Table 2[4]

TABLE 2: MORBIDITY AND MORTALITY FROM 1000 ADDED TONS OF TOBACCO CONSUMPTION

Tobacco induced disease	*Annual new cases*	*Annual added mortality*
Cancer	230	200
Cardiovascular	440	330
Cerebrovascular	130	50
COPD	190	70
Total	990	650

In Africa there have been 32 500 additional tobacco related deaths per annum between the years 1985 and 1995. Even more alarming is the number of cases of morbidity which are not only impinging dramatically on the quality of people's lives, but also on the costs to severely overburdened health systems. All the above mentioned diseases are expensive to treat and are chronic in nature.

1.2 Tobacco consumption in Africa

In Africa the consumption of tobacco is expected to rise by 3.2 % per year from 1995, while the rate in other developing countries is 2.6% per year and consumption is static or declining in developed countries.

The factors which will cause this increase in consumption are [4]:

Population growth - there are simply more people available to use tobacco.

Ageing of the population - it is generally accepted that although initiation into smoking takes place in teenage years, it continues through adulthood and thus the prevalence increases as the population ages.

Socio-economic change - as countries develop, individual incomes improve thus providing more money for "luxuries" . There are also the effects of **urbanisation**, **increased availability** of tobacco, **increased access to media and education** which are all associated with an increase in the consumption of tobacco. Barnum estimates that a ten percent per capita increase in income can be expected to increase tobacco consumption by 7 per cent [4].

The price of tobacco also plays an important role - especially for young people. It is estimated that a price increase of ten percent reduces the number of people starting to smoke by almost 15 per cent, and the price elasticity is estimated to be even greater in lower income countries [4].

Advertising- the industry is well aware of the declining markets in the developed countries and are directing more and more advertisements at young Africans, and particularly at women who still maintain very low rates of smoking in Africa. In

countries which still have very low rates of smoking among women "women's brands" are beginning to appear, specifically targeted at young women by using images of emancipation, slimness, beauty and desirability[5]

Health information - is often not available in developing countries and many African countries do not prioritise health education campaigns designed to reduce tobacco use, erroneously seeing this as a problem of the developed world only.

1.3 The Consumption of Tobacco in South Africa

Thirty four percent of adult South Africans smoke, a total of 7 million people. Fifty two percent of men smoke and 17% of women smoke. The overall figures have increased by 1% per year since 1992. The increase had been greatest among the coloured population and they have the highest overall smoking rate of 59%. Forty eight percent of households have at least one smoker, which means that exposure of non smokers and children to cigarette smoke is a major health hazard[6].

All the factors which have been shown to increase tobacco consumption are present in South Africa:

Population growth

Ageing of the population

Both these factors have the same effect as in the rest of the developing world

Socio-economic change

Political change has meant that the country is now in an economic upswing with a commitment from the new government to socio-economic upliftment through the

Reconstruction and Development Programme. This means that more South Africans will have increased income and this could translate into increased smoking rates.

Advertising

Recent legislation in South Africa has forced the tobacco industry to place warnings of a certain size on all their advertisements. In addition radio stations are required to either ban tobacco advertising or to give air time to government anti-smoking advertisements free of charge. There is still extensive advertising and promotions which are more difficult to tackle as they are often "below the line" like sponsorship of sports events, scholarships, tours of the Tobacco Institute by school children, and support of political parties. Many magazines and newspapers depend quite heavily on the revenue they receive from tobacco advertising. This not only encourages increased advertising, but many of the newspapers and magazines will not carry any anti-tobacco information or even advertisements [7].

Health information

South Africa has a poor education and information record with low rates of adult literacy[8]. Despite this 87% of adult South Africans do know that tobacco is harmful to their health [6].

1.4 The Health effects of Tobacco

The wide range of diseases[9,10] caused by tobacco use was most clearly illustrated by the study by Professor Richard Doll who followed up 34 439 British male doctors over 40 years[11].

Cancers:

The study showed that three types of cancer (the upper respiratory tract, lung and oesophagus) were closely related to smoking with mortality caused by these cancers in heavy smokers at least 15 times those of non smokers. Cancers of the bladder and pancreas were three times more likely in heavy smokers than non smokers. Cancer of the stomach, rectum and myeloid leukaemia also showed significant associations with smoking. In South Africa in 1988, deaths from cancer of the lung and oesophagus accounted for 39% of all cancer deaths.[12] In South Africa lung cancer rates have increased by 100% for coloured men and 300% for coloured women between 1968 and 1988.

Lung diseases

Lung diseases which show a strong relationship with smoking are chronic obstructive lung disease, tuberculosis and pneumonia. These diseases account for the majority of lung disease in the United States of America.[9] Estimating chronic obstructive lung disease rates is difficult, but rates of tuberculosis in some areas in South Africa (the Western Cape) are the highest in the world.

Cardiovascular disease

The excess mortality from vascular diseases in cigarette smokers was more than double that attributed to the cancers of the respiratory system and upper digestive tracts, even though the cancers are more closely related to smoking rates. The proportion of all deaths in South Africa due to cardiac disease related to smoking was 25.3% in white males, and 1.8 % in African women in 1988[6].

Other diseases

Mortality from cirrhosis of the liver was five times as great in smokers as non smokers. The peptic ulcer mortality were about three times higher among smokers than non smokers. The Doll study is the most elegant study, but it confirms associations which have been shown many times with all of these diseases.

Passive smoking

Diseases from passive smoking have been documented, and the exposure is important both at home and at the workplace. The diseases range from low birth weight infants (in mothers who smoke) to increases in death due to cancer. Children of smokers have also been shown to suffer form asthma, upper respiratory illnesses and glue ear more often than those of non-smokers.[13,14,15]

There is no doubt that smoking has adverse health effects and causes excess mortality and morbidity, and that controlling the use of tobacco would reduce the burden of death

and disease. It is estimated that in South Africa smoking accounted for a total of 110 856 potential years of life lost between the ages of 35 and 64 years, in 1988.[12]

1.5 Health Promotion and Tobacco

The aim of health promotion is to increase people's control over their own health.

The aim of health promotion related to tobacco control is to reduce demand and to reduce supply, as well as increase people's own control over their health. The Ottawa Charter of 1986 elaborates on five basic actions for health promotion[16]:

1. Create healthy public policy
2. Create supportive environments
3. Support community action
4. Develop personal skills
5 Reorient health services

Applying these actions to tobacco control creates the basis for a health promotion plan of action relating to tobacco:

1. Create healthy public policy:

This is seen by many as the most important health promotion action in tobacco control. It is action through legislation, fiscal control, and advocacy for healthy policies. It means ensuring that there is appropriate legislation relating to tobacco: regulating its sale through licensing; regulating its promotion through banning advertising and promotional

practices; ensuring that its price is high and thus decreasing the availability of tobacco to people starting to use tobacco. Taxation is one way of maintaining high prices and there is some debate about whether tobacco excise tax should be earmarked for health promotion as in the Victoria model[17], where tobacco taxes fund the Health Promotion Foundation, and the money is used as alternative funding for sports and entertainment. Additional policies to limit smoking in public places also reduce the amount smoked and encourage people to stop smoking.[18,19,20,21]

2. Create supportive environments:

This means both physical and social environments where not smoking is seen as the desirable norm. Making sure that influential environments such as the home and school are smoke free and do not promote smoking.[22] Ensuring media environments where smoking is not the norm, as has become the case in Hollywood.

3. Develop personal skills:

Skills such as peer resistance, stress management and conflict resolution would assist young people in not starting to smoke. Information about the health and economic effects of smoking, as well as information about how advertising works is important. An understanding of how tobacco promotions work would also assist in reducing smoking. Smoking is a very strong addiction and skills which help in breaking that addiction are very useful for people who want to stop.[23]

4. Supporting community action:

This an important part of health promotion and community action groups against tobacco have been very successful in certain situations. RJ Reynolds[a] tried marketing a cigarette with a high tar and nicotine and low menthol content specifically for the African American community. The community responded by forming a coalition and forced the new cigarettes off the shelf and out of production within three weeks[24].

5. Reorienting of health services:

In relation to tobacco control this means making help available for smoking cessation programmes at local health services. It also means reorienting the health budget towards prevention and promotion in order to allow the fulfilment of other health promotion actions. The World Bank recommends that a combination of approaches which includes increasing excise tax, banning advertising and sponsorship, banning sales to children, and support for quitting programmes should form part of any primary health care package[25]. The health services in South Africa have not included these in their programmes to any large degree.

1.6 Youth and Tobacco

In 1994 the Surgeon General of the United States of America produced a major report entitled *Preventing Tobacco use among Young People*[21]. The report confirms that

[a] A Large American Tobacco Company

cigarette smoking is the chief preventable cause of premature disease and death in the United States of America. It focuses on youth for the following reasons:

1. Nearly all first use of tobacco occurs by the age of 18.
2. Most adolescent smokers are addicted to nicotine.
3. Tobacco is often the first drug used by young people who subsequently abuse illegal drugs.
4. Cigarette advertising appears to increase the risk of young people smoking.
5. Adolescents with lower levels of school achievement, fewer skills to resist pervasive influences to use tobacco, friends who use tobacco, and with lower self-images are more likely than their peers to use tobacco.
6. Community-wide efforts have successfully reduced adolescent use of tobacco.[26]

This comprehensive report provides ample evidence of the extent of the problem and of some of the factors which have been associated with adolescent use of tobacco.

Other factors which have been said to be strongly associated with adolescent smoking are those of peer pressure, the example of siblings and parents, and employment outside of the home.

1.7 Youth and Prevention

Prevention programmes aimed at reducing tobacco use have been shown to be effective in a number of cases.[27,28,29] These programmes have often been targeted at adolescents for the reasons above as well as the nature of adolescence in our society. Developmentally adolescence is a period of rapid and significant change for the individual and thus they are at increased risk for a variety of problem behaviours, of which tobacco use is one.[30] The use of tobacco in adolescence most often goes on to become an addiction which affects the entire future of the adolescent. Adolescence is a crucial time of social learning and integration into society, disruption of such learning and alienation from the society can have a negative impact on the adolescent as well as on the society as a whole.[31] Pressure by peers plays a major role in adolescence, as does experimentation and rebellion, the need and wish to behave differently is often accompanied by increased risk of smoking.[32]

Determinants of smoking behaviour are a complex interplay of psychological, social, developmental, cognitive, and environmental factors. Psychological factors such as low self esteem, low sense of control, low self confidence, increased anxiety and impulsivity and lower assertiveness have been shown to increase the risk of tobacco use.[33,34] Many of these psychological factors are exhibited in normal adolescence. Social factors include family influences amongst which the attitude of parents and role modelling of parents are important.[35] Peer

group influences have also been shown to be extremely powerful, especially the peer norm, which is the perception (not necessarily the reality) of what one's peers are doing. The adolescent's connection to the community and belief in society is inversely related to substance abuse.[36] Developmental factors such as the rapid change for the individual during the adolescent period increases the risk for smoking[36]. The developmental process often means that adolescents are at different stages of development to each other and they need to find common ground with others - this may be in the use of tobacco and other substances[21] Cognitive changes also increase the risk of smoking. For example, adolescent thinking is more flexible and hypothetical, and so adolescents are able to consider alternative lifestyles. Adolescent thinking also tends to be grounded in the present, and so they are more concerned with immediate effects rather than long term consequences. In addition adolescence is often characterised by a sense of immortality.[37] Environmental factors such as the availability of tobacco, and the amount and type of advertising plays a major role in smoking behaviour. Many people argue that the tobacco industry directly targets the adolescent market through sponsorship of sport, rock concerts, use of cartoon characters and handing out of cigarettes at rock concerts.[38, 21] Another factor in South Africa is the sale of cigarettes to minors. The new Tobacco Products Control Act no 83 of 1993 prohibits the sale of tobacco to youth under 16 years, but this is not enforced[39] and is complicated by the sale in the informal sector of "loose draws" (individual cigarettes), making them even more accessible to adolescents.[6,40]

In order to ensure an appropriate prevention programme one has to unravel some of the factors which are causing young people to smoke. The complexity of South African society also makes it necessary to explore the effect of race and gender on smoking behaviours, as well as the interplay between smoking and other substance use. It is also important to measure smoking prevalence to determine trends and to provide a baseline against which the effects of an intervention can be measured.

1.8 Race, Gender and Tobacco

South Africa is said to represent a "microcosm" of international tobacco trends with white males (representing the developed world) decreasing their smoking , coloured men and women increasing (representing the developing world) and black men and women smoking less, but with the potential to increase dramatically (representing the least developed countries). The focus on race and tobacco use is important because the marked differences (social, cultural and economic) brought about by apartheid need to be acknowledged in order to target any prevention programme correctly[41].

Gender differences in tobacco use have been shown many times. In developed countries women's smoking rates are often the same as men's, sometimes higher[42]. In developing countries women smoke far less than men for a number of reasons, of which social taboo seems the most important. However with development, the breakdown of traditional cultures and the emancipation of women, smoking is increasing dramatically in some areas, and is expected to increase in others. To compound this women have been shown to be a target for advertising, and advertising which focuses on emancipation and

sophistication, and the western ideal of slimness, especially in developing countries. [2,10,43] Brands which are directed specifically at the female market have also been launched. [38]

1.9 Aim

This study examines the extent and nature of cigarette smoking in high schools in Johannesburg in 1994.

1.10 Objectives

The objectives of this study were:

- to determine the extent of tobacco use in high schools in the Greater Johannesburg area.

- to determine whether some of the known social risk factors for tobacco use are applicable in Johannesburg schoolchildren. These risk factors are family structure, parental role modelling, relationship with parents, and peer group influence.

- to determine whether there are race, gender or social class differences in the smoking patterns of students in the Greater Johannesburg area.

- to determine whether there is an association between the use of tobacco and other substances such as alcohol, cannabis, Mandrax and solvents.

2. METHODOLOGY

The study had a cross sectional analytic design.

2.1 Study Population

The population of the Johannesburg area is very varied. It consists of many different groups of people from widely differing social, economic and cultural backgrounds. The estimated total population of youth at high schools in the Greater Johannesburg area is 300 000.[44]

The high schools of the Greater Johannesburg area were divided into 4 strata roughly representing a racial or social group.

1. Twenty four schools which used to be the all white Transvaal Education Department (TED) schools[a]. For convenience this stratum will be called "Ex TED".

2. Schools which were previously run by the House of Representatives and the House of Delegates[b]. There are 20 schools in this stratum. For convenience this stratum will be called "Ex HoR".

---

[a] These schools are public schools, they have been open to youth of other colours for a number of years, but are situated within the still largely white suburbs of Johannesburg, and most have a majority of white pupils.

[b] These schools serve the Indian and Coloured populations as defined by apartheid. They are now also open to youth of other races, but are in the Indian and Coloured living areas in the west of Johannesburg, and the majority of scholars are Indian or Coloured.

3. Schools in Soweto which were run by the Department of Education and Training (DET). There are 59 schools in this stratum[a]. For convenience this stratum will be called "Soweto".

4. Private schools where the fees are significantly higher than at the public schools[b]. There are however in this stratum a number of "inner city schools" which serve lower middle class students whose parents wanted to remove their children from the violent and disruptive atmosphere of the townships in the late eighties and early nineties. There are 59 schools in this stratum. For convenience this stratum will be called "Private".

[a] These schools have almost exclusively students who are Black Africans.
[b] There are many different types of private schools, some of these schools are very mixed racially and others are predominantly white or black.

2.2 Qualitative Phase

Using the strata discussed above, 8 schools were randomly selected in which to run focus groups, two schools from each stratum were chosen. These schools were different from the ones which were used for the quantitative research. Although 8 groups were planned, it was impossible for the researcher to run the groups in Soweto at that time as there were school boycotts. A total of 6 focus groups were conducted. The focus group methodology is intended to give information of a qualitative nature which one cannot get through quantitative research. It is information which gives richness and an understanding of why people behave the way they do.[45,46]

The groups were comprised of between 10 and 14 standard 8 pupils from each of the 8 schools. The children were chosen randomly from the standard eight class lists. The focus group discussions were conducted and analysed prior to the quantitative phase of research. The results were used to inform the questions included in the quantitative questionnaire.

A discussion guide was formulated using ideas and questions found in literature[47] about the use of qualitative research in substance use. Each group was facilitated by the researcher. The focus group discussions took between one and two hours, and were tape recorded.

2.2.1 Qualitative Analysis

The discussions were transcribed verbatim by the researcher. The transcriptions were analysed using key words and themes, following the grounded theory method.[48] The discussions included the use of substances other than tobacco but only the information related to tobacco use will be presented here.

2.3 Quantitative Phase

2.3.1 Sample size

Using the assumption that about 50% of youth will have experimented with alcohol and tobacco, and accepting a figure which varies from this by 5%, to have an estimated confidence level of 95% , and a power of 80%, the sample size in each stratum was estimated to be about 385. However in order to allow for the greater numbers of schools and students in strata 3 and 4, it was decided to weight the sample.

The sampling procedure was a multistage cluster sampling with the school being the first random cluster, followed by the second random cluster - the classroom. Five schools were randomly chosen from strata 3 and 4, while only 3 schools were randomly chosen from strata 1 and 2. Within each school a class was randomly selected from each standard and the questionnaire was administered to each child in those classes, by either the guidance teacher (2 schools) or independent field workers.

2.3.2 The Instrument

A self administered anonymous questionnaire was administered to each child by independent field workers (Appendix 1). The questionnaires were administered under examination-like conditions, and most often not in the presence of their teachers. On completion of the questionnaire the student was provided with a blank envelope in which to seal the questionnaire, demonstrating confidentiality and anonymity.

The questionnaire was derived from a combination of questionnaires used previously in studies in both South Africa and in the United States of America, and from the results of the qualitative phase. [49,50] It was piloted in one school and one minor change was made to the question about adult smoking(question 7), adding the option of "other adults living in the home smoking".

2.4 Analysis

The questionnaires were coded and then punched into a personal computer using the dBase IV[51] programme. The data was cleaned and analysed using the Epi Info 6[52] programme. Univariate and bivariate analysis was performed on the data using the Epi Info 6 programme and multivariate analysis, including logistic regression analysis was performed using the Egret[53] software package.

2.5 Limitations

All the results of this study are probably an underestimate of the use of tobacco among young people because young abusers of any substance are more likely to have dropped out of school, or to be absent from school at the time of the survey, and this is even more important in developing countries. [20,54] Similarly in the Soweto schools there is the likelihood that students who use substances are not able to maintain themselves at school, while in the more affluent schools it may be more possible for students to remain at school and still abuse substances, which would tend to underestimate the use among Soweto youth more than other areas. Because of the strong association between tobacco use and other substances this must be true for tobacco use as well.

Another limitation of the study is that use is self reported and not objectively tested through serum or urinary cotinine or other tests. It is however generally accepted that anonymous self reporting is considered valid [21,55] and the similarity of results with other studies in South Africa will tend to bear this out. There is also some evidence that although one misses school dropouts and absentees in school surveys, the relative anonymity of a school questionnaire vs. the inhibitory interview of a household survey, produces more valid results. [21]

The third limitation may be the sampling technique. A two stage cluster sample was taken, and because the unit of analysis was student there may be a design effect with increased homogeneity in each cluster.

3. RESULTS

The results will be presented in seven sections:

1. Qualitative results

2. A description of the sample and the rates of tobacco use in high schools, and the demographic factors influencing the rates

3. The extent of tobacco use

4. Further analysis of other factors which could influence the use of tobacco in high schools

5. Relationship between tobacco use and other substances

6. A comparison of the strata

7. Multivariate analysis

3.1 Qualitative Results

3.1.1 General Impressions

The groups of teenagers were without exception enthusiastic, keen to participate and lively. They showed a zest for life, a curiosity and a strong caring for others. It was very

heartening that the very traits which can create difficulties for adolescents, such as the rapid psychological changes, of flexible and hypothetical thinking, also encourages very positive behaviour.

There were also some very disturbing overall impressions. The most constant was the lack of recreation for youth of their age group, which applied to all groups and resulted largely from lack of adequate public transport. In addition there is very little other entertainment aimed at under eighteen year olds, there are few meeting places or places to listen to music for that age group. There seems to be very little sport, or encouragement of sport for girls. The boys do however talk about sport taking up most of their time.

A lack of control and a feeling of powerlessness, especially in the face of peer pressure was a problem for many youngsters. They really do not have the resources to deal with the pressure. There is a very strong peer norm operating which means that these youngsters believe that everybody else is doing it - in this case smoking cigarettes. This is often an erroneous impression, but exerts very strong peer pressure to conform.

There was a lack of useful information about all the substances talked about, but they had shockingly little and superficial information about the health effects of alcohol and tobacco; the only well known health effect of tobacco was cancer.

The themes which will be discussed in detail are:

Why people take substances

Peer pressure

Access to substances

Negative effects

Influences and information

Whom you turn to with a problem

3.1.2 Why People Take Substances

> *"to get happy"*
>
> *"just for the hell of it"*
>
> *"to escape from their problems"*
>
> *"it relieves stress"*
>
> *" I know people that take drugs or smoke because they feel they've now become big or hotshots" "Ya, you become a celebrity"(sic)*

The students all said that it is wrong to take drugs and use alcohol and tobacco, but the way they describe the substances belies their words. The imagery of using substances is very positive and there were very few negative images of substances. The only negative images of tobacco were directed at girls:

> *" for girls to smoke it really looks ugly "*(sic)

3.1.3 Peer Pressure

Why people take substances was closely tied in with peer pressure:

"it's the fashion at our school to drink and smoke"

"and then you don't feel out of place like you don't say no like you're not one of them"(sic)

"it depends if you want to fit in"

"all our friends smoke so we smoke with them"

" you can't say no"

The pressure seems insurmountable to many of these young people, there seems nothing more difficult for them than not fitting in. There was no talk about positive peer pressure where the group would not accept smoking, or taking other substances.

3.1.3 Access to Substances

Access to all substances seemed to be fairly easy. Most of the groups knew whom to contact and where to go to get the various substances. Tobacco was freely available not only for these 15 year olds, but for primary school children. Many talked about 12 year olds smoking and drinking.

"I promise you you know where to go"

"Its just much easier (getting dagga) like getting cigarettes"(sic)

3.1.4 Negative Effects

> " *like it slows you down, you don't understand properly, you take time to understand that in school and like my eyesight its weakening and things like that"(sic)*
>
> *"if you are a cigarette smoker you can't breathe properly"*
>
> *" ya I mean its only a health risk after you've been smoking a long time"*

Although there is clearly a feeling that smoking is harmful to health, and most students knew about lung cancer, there was not much clarity about those "harmful effects". The addictive nature of tobacco was hardly mentioned, one got the impression that one could smoke when you are young, the problems only start when you are older and you can deal with them at a later stage.

3.1.5 Influences and Information

Related to the negative effects it also became clear that many students didn't really believe what they had been told about tobacco.

> " *Well sometimes they'll say so many millions of people have died, whereas it can only be a few hundred or something. They always try to scare you like that if you take one drag of a cigarette you're addicted"*

" I mean they encourage you and then , I mean at first they get you can't shouldn't smoke, and that smoking is your own health risk and they sell it, so what you supposed to do? Smoke? Don't smoke?"

" You see there are posters and even campaigns against smoking and you know, no smoking in cinemas, and why should they still sell cigarettes? And the boxes they've got here smoke at your own risk so that's a bit... I mean first they encourage you to go against and then after that they influence you, I mean then what do you do?

" Everyone experiments, I mean you want to find out what it is like, then you going go on to higher things like drugs. I always think you eventually die,
so ...."

There is a clearly a lot of confusion about where information is coming from. There is plenty of conflicting information, coming from tobacco companies through advertising and sponsorship and from the anti-smoking lobby. These youngsters obviously could not interpret the relative value of the information - the advertising being so much more attractive and enticing. There is also the possibility that the anti-smoking lobby

overstates the statistics (or do not explain them fully) to try and convince young people, but they only succeed in creating a sceptical audience.

3.1.6. Whom Do You Turn to With a Problem?

> " *If you had to go to someone you wouldn't go to your parents"*
>
> *"You go to someone and they might tell others"*
>
> *"Friends"*
>
> *"I won't go to a friend because your friend has also got a problem, like she'll never experience what you are experiencing, now I'd rather go to an older person like a neighbour or somebody, then I just keep it to myself"*

There is a perceived lack of support by parents, and even peers. It was a source of concern that the students did not feel able to take their problems anywhere, and they did not appear to have the tools to deal with them either.

3.2 Quantitative Results - Description of the Sample

There were a total of 1292 questionnaires filled in with 44 spoiled questionnaires resulting in a response rate of 96.7%. No pupils refused to fill in the forms.

The mean age of the overall sample was 16.2 years. The Ex TED had a mean age of 15.8, Ex HoR had a mean age of 15.4, Soweto had a mean age of 16.6 and Private 17.5. Table 3 shows the gender, languages spoken and standards of the overall sample , as well as those within each stratum.

TABLE 3: DEMOGRAPHICS OF THE SAMPLE

	Total n=1269 Percent[a]	Ex TED n=392 Percent	Ex HoR n=274 Percent	Soweto n=431 Percent	Private n=172 Percent
Sex M	58.8	76.5	52.9	47.9	54.7
F	40.4	23.2	46.4	50.7	44.8
Home Language:					
English	42.2	75	62.8	0.5	39
Zulu	19.9	2.8	13.9	41.4	14.5
Sotho	12.7	1.5	7.7	27.7	8.7
Afrikaans	1.0	0.5	2.2	0.2	2.3
Xhosa	4.8	0.3	2.6	8.1	10.5
Tswana	10.2	2.0	8.4	18.4	11.6
Other African	1.5	0.3	0.7	2.3	3.5
Other	5.7	15.8	0.7	0.2	4.1
Standard 6	23.7	15.8	31	34.7	2.9
7	17.2	12.5	25.2	21.6	4.1
8	19.9	24.2	20.4	14.4	22.1
9	23.0	39.8	8.4	17.0	23.3
10	15.6	7.1	15.0	11.2	47.1
Enough money					
always	58.6	76.8	69	35.8	57.6
sometimes	32.5	19.4	29.6	47.9	29.1
never	6.8	2.8	0.7	13.0	9.9

[a] Summed percentages do not equal 100% due to missing data

Age

It can be seen that the mean ages of Soweto and private are higher than those of the Ex TED and ex HoR. In Private this is probably due to the relatively higher numbers of students in matric and the higher standards. There were also some much older students in Private - 6 above the age of 25. These schools admit mature students who for some reason have not completed their schooling (there is an age limit at public schools). In Soweto, the students tend to have a higher average age within each standard, so despite the relatively high number of lower standard students the age is higher than either Ex TED or Ex HoR. Using the medians and centiles(Table 4), however, the variation is less pronounced.

TABLE 4: AGE DIFFERENCES OF THE STRATA

AGE	Ex TED	Ex HoR	Soweto	Private
Median	16	15	17	17
25th - 75th centiles	15 - 17	14 - 17	15 - 18	16 - 19

Sex

Overall the sample has more boys (58.8%) than girls (40.4%). It is however partially due to the preponderance of males in the Ex TED stratum (76.5%). One of the schools selected was an "all boys" school.

Language

Although there are a variety of home languages within each stratum it is clear that the majority home language of Ex TED and Ex HoR is English and that the majority home language for Soweto and Private is African languages predominantly Zulu . The small number of Afrikaans speaking students means that the results may not be genralisable to those students.

Standard

There is a reasonable spread of students through the standards, with the fewest in matric (standard 10). The exception is Private which has a majority in standard 10.

Social Class

To get a basic idea of class differences pupils were asked if there was enough money for school and food the three options were: Never, sometimes and always. Collectively 58.6% always had enough money, but in the Soweto stratum only 35.8% always had enough money.

3.3 The Extent of Use of Tobacco

The overall use of tobacco in high schools is presented below:

TABLE 5: OVERALL USE OF TOBACCO

	Yes (%)	No (%)	Total (%)
Ever Smoked	513 (41.5)	723(58.5)	1236(100)
Regular smoker[a]	151(12.2)	558(45.1)[b]	709(57.4)

A large proportion of students had tried smoking 41.5%. Twelve percent of students smoked at least one cigarette a day, indicating that they are regular smokers. Of the students who had tried smoking 50.5% said that they had tried to give up. The most common brand name mentioned was Peter Stuyvesant (34%) followed by Camel (15%), Winston (14%), Chesterfield (11.5%) and Consulate (10.8%)

If one breaks it down into age it becomes clear that as students get older so they are more likely to have smoked: (Table 6). They are also more likely to be regular smokers: (Table 7)

[a] More than one cigarette per day
[b] Many did not answer this question as they had said that they had never smoked, some did regardless.

TABLE 6: AGE AND EVER HAVING SMOKED

Age	Smoked: Yes (%)	No(%)	Total(%)
< 16 years	141(31.5)	307(68.5)	448(100)
16-18 years	225(45.2)	272(54.7)	497(100)
>=18 years	147(50.5)	144(49.5)	291(100)
Total	513(41.5)	723(58.5)	1236(100)

Chi Square for trend = 28.985
P = 0.00000

TABLE 7: AGE AND REGULAR SMOKING

Age	Regular smoker Yes(%)	No (%)	Total (%)
< 16 years	40(8.9)	408(91.0)	448(100)
16-18 years	62(12.5)	435(87.5)	497(100)
>=18 years	49(16.8)	242(83.1)	291(100)
Total	151(12.2)	1085(87.8)	1236(100)

Chi Square for trend = 10.290
P = 0.0013

In the under 16 year age group 8.9% of the total sample smoked 1 cigarette per day or more. In the 16-18 year age group 12.5% of the total sample smoked 1 or more cigarettes

per day, and in the 18 years and over age group 16.8% of the total smoked 1 cigarette or more per day.

With increasing standard at school it is more likely that a student has smoked, which can partially be explained by increasing age, but there is no significant difference between standards 8, 9, and 10: (Tables 8 and 9). The proportions of students smoking regularly, are similar in standards 6, 7, and 8 (9-11%) and then increases in standards 9 and 10(14-15%): (Tables 10 and 11)

TABLE 8: STANDARD AND EVER HAVING SMOKED

Standard	Smoked: Yes(%)	No(%)	Total(%)
6	77(27.0)	208(73.0)	285(100)
7	73(34.1)	141(65.9)	214(100)
8	110(45.0)	134(54.9)	244(100)
9	154(53.2)	135(46.7)	289(100)
10	97(49.4)	99(50.5)	196(100)
Total	511(41.6)	717(58.4)	1228(100)[a]

Chi Square for trend = 45.660
P = 0.00000

[a] Data missing for 41 students

TABLE 9: STANDARD AND REGULAR SMOKING

Standard	Regular smoker: Yes(%)	No (%)	Total (%)
6	28(9.8)	257(90.2)	285(100)
7	20(9.3)	194(90.7)	214(100)
8	28(11.5)	216(88.5)	244(100)
9	42(14.5)	247(85.5)	289(100)
10	30(15.3)	166(84.7)	196(100)
Total	148(12.1)	1080(87.9)	1228(100)[a]

Chi Square for trend =5.752

P = 0.016

TABLE 11: STANDARDS 6 , 7 AND 8: REGULAR SMOKING

Standard	Regular smoker: Yes(%)	No (%)	Total (%)
6	28(9.8)	257(90.2)	285(100)
7	20(9.3)	194(90.7)	214(100)
8	28(11.5)	216(88.5)	244(100)
Total	76(10.2)	667(89.8)	743(100)

Chi Square for trend = 0.363
P = 0.54

[a] Data missing for 41 students

Boys have experimented more than girls: (Table 12)

But there is no significant gender difference with regular smokers: (Table 13)

TABLE 12: SEX AND EVER HAVING SMOKED

Sex	**Smoked: yes(%)**	**no(%)**	**Total (%)**
Male	350(47.9)	380(52.0)	730(100)
Female	160(32.0)	339(67.9)	499(100)
Total	510(41.5)	719(58.5)	1229(100)[a]

Prevalence ratio: 1.50

95% confidence limits for prevalence ratio: 1.29< RR<1.73

Chi Square (Yates corrected): 30.14

P = 0.00000004

[a] Data missing for 40 students

TABLE 13: SEX AND REGULAR SMOKING

Sex	Regular smoking Yes (%)	No (%)	Total (%)
Male	100(13.7)	630(86.3)	730(100)
Female	51(10.2)	448(89.8)	499(100)
Total	151(12.3)	1078(87.7)	1229(100)

Prevalence Ratio = 1.34

95% Confidence limits for prevalence ratio 0.98< RR<1.84

Chi Square(Yates corrected) = 3.01

P=0.082

Having spare money (social class) doesn't seem to influence whether students have smoked or not: (Table 14), nor whether they become regular smokers or not: (Table 15).

TABLE 14: SOCIAL CLASS AND EVER HAVING SMOKED

Enough Money	Smoked: yes(%)	no(%)	Total(%)
Always	312(43.2)	411(56.8)	723(100)
Sometimes	154(38.0)	251(62.0)	405(100)
Never	33(40.7)	48(59.3)	81(100)
Total	499(41.3)	710(58.7)	1209(100)[a]

Chi Square for trend = 1.750
P = 0.1858

[a] Data missing for 60 students

TABLE 15: SOCIAL CLASS AND REGULAR SMOKING

Enough Money	Regular smoker Yes(%)	No(%)	Total(%)
Always	83(11.5)	650(89.9)	723(100)
Sometimes	52(12.8)	353(87.2)	405(100)
Never	8(9.9)	73(90.1)	81(100)
Total	143(11.8)	1076(89.0)	1209(100)

Chi Square for trend = 0.00

P = 0.993

3.4 Other Factors Influencing the Use of Tobacco in High Schools

Family Influences

Type of family was assessed by the composition of the family viz. the stable two-parent family, the slightly less stable one-parent family, and other which includes a number of options such as relatives and friends. The type of family that the student comes from does not seem to influence whether a student has ever smoked, but there is an association between family type and regular smoking (smoking at least one cigarette a day). Increasing disorganisation[a] of the family was associated with increasing smoking rates(Table 16).

[a] The organisation of families was defined by the composition of the family - living with two parents being the most organised, one parent following this, and the most disorganised being "other" families.

TABLE 16: FAMILY TYPE AND EVER HAVING SMOKED

Family Type	Smoke: Yes(%)	No(%)	Total (%)
Two Parent	306(40.3)	453(59.7)	759(100)
One parent	168(42.7)	225(57.3))	393(100)
Other	36(50.0)	36(50.0)	72(100)
Total	510(41.7)	714(58.3)	1224(100)[a]

Chi Square for linear trend 2.437
P=0.1184

TABLE 17: FAMILY TYPE AND REGULAR SMOKING

Family Type	Regular smoker: Yes (%)	No(%)	Total(%)
Two Parent	81(10.7)	678(89.3)	759(100)
One parent	54 (13.7)	339(86.3)	393(100)
Other	16(22.2)	56(77.8)	72(100)
Total	151(12.3)	1073(87.7)	1224(100)

Chi Square for linear trend 3.43

P=0.063

[a] Data missing for 45 students

Students who lived with adults who smoke were more likely to ever have smoked than those who lived with non-smokers: (Table 18). There is also a statistically significant association between regular smokers and living with smoking adults: (Table 19)

TABLE 18: ADULT SMOKER IN HOME AND EVER HAVING SMOKED

Adult smoker in home	**Ever smoked:** Yes(%)	No(%)	Total(%)
Yes	285(46.0)	334(54.0)	619(100)
No	214(37.3)	359(62.7)	573(100)
Total	499(41.6)	693(58.1)	1192(100)

Prevalence Ratio = 1.23

95% Confidence limits for Prevalence Ratio : 1.08< RR<1.41

Chi Square 8.89
p=0.0028

TABLE 19: ADULT SMOKER IN HOME AND REGULAR SMOKING

Adult smoker in home	**Regular smoker:** Yes(%)	No(%)	Total(%)
Yes	89(14.4)	530(85.6)	619(100)
No	60(10.5)	513(89.5)	573(100)
Total	149(12.5)	1043(87.5)	1192(100)

Prevalence Ratio = 1.37

95% Confidence limits for Prevalence Ratio :1.01< RR<1.87 Chi Square 3.80 p= 0.0511

If a student perceives him or herself to be close to his or her parents this is negatively associated with both ever having smoked and smoking regularly: (Table 20 and 21.). This association is statistically highly significant.

TABLE 20: BEING CLOSE TO PARENTS AND EVER HAVING SMOKED

Close to Parents	**Ever smoked:** Yes(%)	**No(%)**	**Total(%)**
Yes	364(38.4)	585(61.6)	949(100)
No	140(52.2)	128(47.8)	268(100)
Total	504(41.4)	713(58.6)	1217(100)[a]

Prevalence Ratio = 0.73

95% Confidence limits for Prevalence Ratio : 0.64< RR<0.84

Chi Square 16.03

p=0.000000

[a] Data missing for 52 students

TABLE 21: BEING CLOSE TO PARENTS AND REGULAR SMOKING

Close to Parents	Regular smoker: Yes(%)	No(%)	Total(%)
Yes	91(9.6)	858(90.4)	949(100)
No	54(20.1)	214(79.9)	268(100)
Total	145(11.9)	1072(88.0)	1217(100)

Prevalence Ratio = 0.48

95% Confidence limits for Prevalence Ratio : 0.35< RR<0.65

Chi Square 21.21

p=0.0000

Peer Pressure

A very strong association is demonstrated between smoking and having friends who smoke, both for those who had tried smoking and those who are regular smokers(Tables 22 and 23)

TABLE 22: FRIENDS SMOKING AND EVER HAVING SMOKED

Friends Smoke	Ever smoked: Yes(%)	No(%)	Total(%)
Yes	445(55.1)	363(44.9)	808(100)
No	64(15.5)	349(84.5)	413(100)
Total	509(41.7)	712(58.3)	1221(100)[a]

Prevalence Ratio = 3.55

95% Confidence limits for Prevalence Ratio : 2.81< RR<4.49

Chi Square 174.49

p=0.000000

TABLE 23: FRIENDS SMOKING AND REGULAR SMOKING

Friends smoke	Regular smoker: Yes(%)	No(%)	Total(%)
Yes	131(16.2)	677(83.8)	808(100)
No	17(4.1)	396(95.9)	413(100)
Total	148(12.1)	1073(87.9)	1221(100)

Prevalence Ratio = 3.94

95% Confidence limits for Prevalence Ratio : 2.41< RR<6.44

Chi Square 36.42

p=0.0000

[a] Data missing for 48 students

TABLE 25: FRIENDS SMOKING AND BINGE DRINKING

Friends smoke	Binge drinking: Yes(%)	No(%)	Total(%)
Yes	140(17.0)	684(83.0)	824(100)
No	33(7.7)	392(92.2)	425(100)
Total	173(13.9)	1076(86.1)	1249(100)[a]

Prevalence Ratio = 2.19

95% Confidence limits for Prevalence Ratio :1.53< RR<3.14

Chi Square 19.23

p=0.0000

3.5 Smoking and the Use of Other Substances

The use of more than one substance is part of the "gateway" theory[b] [20,32]. This study found an association between using tobacco and using alcohol, both in experimental and binge drinking(Tables 26 and 27). The association similar with regular smokers(Tables 28 and 29).

[a] Data missing for 20 students

[b] The gateway theory states that there are three sequential stages of initiation into the use of drugs: hard liquor, marijuana and other illicit drugs. Prior involvement with minor delinquency, cigarette, beer and wine use are antecedents for hard liquor use.

TABLE 26: EVER HAVING SMOKED AND USE OF ALCOHOL

Smoke	Ever used alcohol: Yes(%)	No(%)	Total(%)
Yes	373(74.0)	131(26.0)	504(100)
No	250(36.6)	433(63.4)	683(100)
Total	623(52.5)	564(47.5)	1187(100)[a]

Prevalence Ratio =2.02

95% Confidence limits for Prevalence Ratio : 1.81< RR< 2.26

Chi Square 161.20

p=0.0000

TABLE 27: EVER HAVING SMOKED AND BINGE DRINKING

Smoke	Binge drinking: Yes(%)	No(%)	Total(%)
Yes	110(21.4)	403(78.6)	513(100)
No	63(8.7)	660(91.3)	723(100)
Total	173(14.0)	1063(86.0)	1236(100)

Prevalence Ratio = 2.46

95% Confidence limits for Prevalence Ratio :1.84< RR<3.28

Chi Square 39.34

p=0.0000

[a] Data missing for 82 students

TABLE 28: REGULAR SMOKING AND USE OF ALCOHOL

Regular smoker	Ever used alcohol: Yes(%)	No(%)	Total(%)
Yes	115(76.7)	35(23.3)	150(100)
No	512(48.3)	547(51.7)	1059(100)
Total	627(51.9)	582(48.1)	1209(100)[a]

Prevalence Ratio =1.59

95% Confidence limits for Prevalence Ratio : 1.42< RR< 1.77

Chi Square 41.08

p=0.0000

[a] Data missing for 60 students

TABLE 29: REGULAR SMOKING AND BINGE DRINKING

Regular smoker	Binge drinking: Yes(%)	No(%)	Total(%)
Yes	70(46.4)	81(53.6)	151(100)
No	211(23.3)	907(81.1)	1118(100)
Total	281(22.1)	988(77.9)	1269(100)

Prevalence Ratio = 2.46

95% Confidence limits for Prevalence Ratio :1.99< RR< 3.03

Chi Square 56.71

p=0.0000

Smoking is also associated with the use of other substances. Students who had ever smoked were 7.47 times more likely to have tried dagga than students who had never smoked(Table 30), and 7.20 times more likely to use dagga regularly(Table 31)

TABLE 30: EVER HAVING SMOKED AND USE OF DAGGA

Smoke	Ever used dagga: Yes(%)	No(%)	Total(%)
Yes	196(39.0)	307(61.0)	503(100)
No	37(5.2)	672(94.8)	709(100)
Total	233(19.2)	979(80.8)	1212(100)

Prevalence Ratio =7.47

95% Confidence limits for Prevalence Ratio : 5.36< RR< 10.41

Chi Square 213.64

p=0.0000

TABLE 31: EVER HAVING SMOKED AND REGULAR USE OF DAGGA

Smoke	Regular use of dagga: Yes(%)	No(%)	Total(%)
Yes	97(18.9)	416(81.1)	513(100)
No	19(2.6)	704(97.4)	723(100)
Total	116(9.4)	1120(90.6)	1236(100)

Prevalence Ratio =7.20

95% Confidence limits for Prevalence Ratio : 4.46< RR< 11.61

Chi Square 91.62

p=0.0000

Interestingly the association is not as strong between regular smokers and dagga smoking, but a regular smoker is still four times more likely to use dagga than a non smoker, and three and a half times more likely to be a regular dagga user than a non smoker(Table 32 and Table 33).

TABLE 32: REGULAR SMOKING AND EVER HAVING USED DAGGA

Regular smoker	**Ever used dagga:** Yes(%)	No(%)	Total(%)
Yes	77(51.7)	72(48.3)	149(100)
No	140(12.8)	951(87.2)	1091(100)
Total	217(17.5)	1023(82.5)	1240(100)

Prevalence Ratio =4.03

95% Confidence limits for Prevalence Ratio : 3.23< RR< 5.01

Chi Square 134.34

p=0.0000

TABLE 33: REGULAR SMOKING AND REGULAR USE OF DAGGA

Regular smoker	Regular use of dagga: Yes(%)	No(%)	Total(%)
Yes	38(25.1)	113(74.8)	151(100)
No	78(7.0)	1040(93.0)	1118(100)
Total	116(9.1)	1153(90.9)	1269

Prevalence Ratio =3.61

95% Confidence limits for Prevalence Ratio : 2.55< RR< 5.11

Chi Square 50.82

p=0.0000

As with dagga, those who have smoked are 7.61 more likely to have used solvents..

TABLE 34: EVER HAVING SMOKED AND SNIFFING SOLVENTS

Smoke	Sniffs solvents regularly: Yes(%)	No(%)	Total(%)
Yes	27(5.3)	486(94.7)	513(100)
No	5(0.7)	718(99.3)	723(100)
Total	32(2.6)	1204(97.4)	1236(100)

Prevalence Ratio = 7.61

95% Confidence limits for Prevalence Ratio : 2.95< RR< 19.63

Chi Square 23.09

p=0.0000

Although regular smokers were 2.5 times more likely to use solvents, the relationship was not as strong as that between students who had tried smoking and using solvents: (Table 35 and Table 36)

TABLE 35: REGULAR SMOKING AND SNIFFING SOLVENTS

Regular smoker	**Ever sniffed solvents: Yes(%)**	**No(%)**	**Total(%)**
Yes	32(22.0)	113(77.9)	145(100)
No	93(8.9)	947(91.1)	1040(100)
Total	125(10.5)	1060(89.5)	1185(100)

Prevalence Ratio =2.47

95% Confidence limits for Prevalence Ratio : 1.72< RR< 3.55

Chi Square 21.87

p=0.0000

TABLE 36: REGULAR SMOKING AND REGULAR SNIFFING OF SOLVENTS

Regular smoker	**Sniffs glue regularly: Yes(%)**	**No(%)**	**Total(%)**
Yes	11(7.3)	140(92.7)	151(100)
No	21(1.9)	1097(98.1)	1118(100)
Total	32(2.5)	1237(97.5)	1269(100)

Prevalence Ratio =3.88

95% Confidence limits for Prevalence Ratio : 1.91< RR< 7.88

Chi Square 13.70

p=0.0006

Smoking was strongly associated with taking Mandrax. A student who has tried smoking is almost five times more likely to have tried Mandrax than one who has not tried smoking (Table 37).

TABLE 37: EVER HAVING SMOKED AND USING MANDRAX

Smoke	Smoked Mandrax: Yes(%)	No(%)	Total(%)
Yes	35(12.3)	249(87.7)	284(100)
No	7(2.5)	271(97.5)	278(100)
Total	42(7.5)	520(92.5)	562(100)[a]

Prevalence Ratio =4.89

95% Confidence limits for Prevalence Ratio : 2.21< RR< 10.83

Chi Square 18.41

p=0.0000

TABLE 38: EVER HAVING SMOKED AND USING OTHER DRUGS

Smoke	Ever used other drugs: Yes(%)	No(%)	Total(%)
Yes	61(12.9)	411(87.1)	472(100)
No	15(2.2)	660(97.8)	675(100)
Total	76(6.6)	1071(93.4)	1147(100)

Prevalence Ratio =5.82

95% Confidence limits for Prevalence Ratio : 3.35< RR< 10.11

Chi Square 49.70

p=0.0000

[a] Data missing for 707 students - this is probably because of the phrasing of the question, dagga and mandrax were linked in the questionnaire.

3.6 The Differences Between the Strata

The four strata represent different segments of the population and social groupings. Details of the selection of the strata were discussed on pages 19 and 20. The demographic features of the strata were discussed in Section 3.2. pages 32-34. The differences in the other variables which influence the use of substances and the outcome variables will be discussed here.

The highest proportion of students having tried smoking is among Ex TED (54.5%), followed closely by Ex HoR(47%). With Soweto the lowest (27%). There is a statistically significant trend from the Ex TED stratum through Ex HoR to Private and then Soweto.

TABLE 39: EVER HAVING SMOKED AND STRATA

Smoke	Ex TED No(%)	Ex HoR No(%)	Soweto No(%)	Private No(%)	Total(%)
yes	212(54.5)	127(47.2)	112(27.4)	61(36.3)	512(41.5)
no	177(45.5)	142(52.8)	297(72.6)	107(63.7)	723(58.5)
Total	389(100)	269(100)	409(100)	168(100)	1235(100)[a]

Chi square for linear trend = 47.48

P= 0.0000

Table 40 shows the rates of regular smoking the highest rates in Ex HoR (19%), and lowest in Private (6.5%). Again there was a statistically significant trend, but with Ex HoR leading and with Private and Soweto strata's positions reversed Sex was not a factor in the differences between the strata. If one looks only at males the differences remain statistically significant (Table 41). Among females the stratum with the highest proportion of regular smokers was Ex TED followed closely by Ex HoR. The trend is again statistically significant.(Table 42)

[a] Data missing for 34 students

TABLE 40: REGULAR SMOKING AND STRATA

Regular smoker	Ex TED No(%)	Ex HoR No(%)	Soweto No(%)	Private No(%)	Total(%)
yes	49(12.6)	52(19.3)	38(9.3)	11(6.5)	150(12.1)
no	343(87.4)	217(80.7)	371(90.7)	157(93.5)	1085(87.9)
Total	389(100)	269(100)	409(100)	168(100)	1235(100)

Chi square for linear trend = 7.118
P= 0.0076

TABLE 41: REGULAR SMOKING AND STRATA (MALES ONLY)

Regular Smoker	Ex TED No(%)	Ex HoR No(%)	Soweto No(%)	Private No(%)	Total(%)
yes	36(12.0)	34(23.4)	21(10.2)	8(8.5)	100(13.4)
no	264(88.0)	111(76.6)	185(89.8)	86(91.5)	646(86.6)
Total	300(100)	145(100)	206(100)	94(100)	746(100)

Chi square for linear trend: 1.315

P= 0.2514

TABLE 42: REGULAR SMOKING AND STRATA (FEMALES ONLY)

Smoke	Ex TED No(%)	Ex HoR No(%)	Soweto No(%)	Private No(%)	Total(%)
yes	13(14.3)	18(14.2)	17(7.8)	3(3.9)	51(9.9)
no	78(85.7)	109(85.8)	201(92.2)	74(96.1)	462(90.1)
Total	91(100)	127(100)	218(100)	77(100)	513(100)

Chi square for trend: 7.74
P=0.0053

Family Type

Family type has some influence on the use of substances (Section 2). In this sample Ex TED, Ex HoR, and Private are similar with respect to family type, but Soweto is different (Table 43).

TABLE 43: FAMILY TYPE AND STRATA

Family type	Ex TED No(%)	Ex HoR No(%)	Soweto No(%)	Private No(%)	Total
Two Parent	269(68.6)	185(67.5)	223(53.0)	107(63.3)	784(62.4)
Single parent	109(27.8)	73(26.6)	163(38.7)	54(32.0)	399(31.8)
Other	14 (3.6)	16 (5.8)	35(8.3)	8 (4.7)	73(5.8)
Total	392(100)	274(100)	421(100)	169(100)	1256(100)

Chi square = 28.46

P= 0.0000

Without Soweto Chi square = 3.44 and P=.487

It is clear that there are more single parent families in Soweto as well as "other" families - indicating a greater degree of family disorganisation.

Relationship with Parents

In section 2 it was clear that the use of all substances was negatively associated with the students feeling close to their parents. There were no differences between the strata (Table 44)

TABLE 44: BEING CLOSE TO ONE'S PARENTS AND STRATA

Close to parents	Ex TED No(%)	Ex HoR No(%)	Soweto No(%)	Private No(%)	Total(%)
yes	304(78.4)	217(80.1)	312(75.0)	140(82.8)	973(78.2)
no	84(21.6)	54(19.9)	104(25.0)	29(17.2)	271(22.1)
Total	388(100)	271(100)	416(100)	169(100)	1244(100)[a]

Chi square = 5.20

P= 0.1577

Two significant influences on whether a student tries smoking or becomes a regular smoker are whether their parents, or adults they live with smoke, and whether their friends smoke.

[a] Data missing for 25 students

Table 45 shows that Ex TED, Ex HoR and Soweto are similar in the percentage of students living with and adult who smokes (about 55%), but that Private is different , only 33% of students live with an adult who smokes. There is a statistically significant trend with Ex TED leading, followed by Ex HoR and Soweto and with Private having a much lower rate of students living with adults who smoke.

Table 46 shows that students believe that their friends smoke. Eighty three percent of students in Ex TED believe that their friends smoke, while the numbers in the other strata decrease to 50% in Soweto. This may partially account for the variation in smoking rates between the strata (Table 39). The trend is statistically significant, the highest rates are in Ex TED, followed by Ex HoR, Private and Soweto have the lowest rates.

TABLE 45: ADULT SMOKING AND STRATA

Adult Smoke	Ex TED No(%)	Ex HoR No(%)	Soweto No(%)	Private No(%)	Total(%)
yes	201 (55.5)	153 (55.8)	223 (53.7)	55 (32.7)	632 (51.8)
no	161(44.5)	121(44.2)	192(46.3)	113(67.3)	587(48.2)
Total	362(100)	274(100)	415(100)	168(100)	1219(100)

Chi square for trend: 14.66
P= 0.0001

TABLE 46: FRIENDS SMOKE AND STRATA

Friends Smoke	Ex TED No(%)	Ex HoR No(%)	Soweto No(%)	Private No(%)	Total(%)
yes	325 (83.3)	186 (68.9)	208 (49.9)	104 (60.8)	823 (65.9)
no	65(16.7)	84(31.1)	209(50.1)	67(39.2)	425 (34.1)
Total	390(100)	270(100)	417(100)	171(100)	1248(100)[a]

Chi square for trend: 74.72
P=0.0000

[a] Data missing for 21 students

3.7 Multivariate Analysis

Multivariate analysis was done with ever having smoked and regular smoking as dependent variables. The statistical package Egret was used. A stepwise logistic regression analysis was performed using a simple model, variables were selected using the P value of <0.05 for inclusion. The independent variables were: Sex, age, standard, friends that smoke, feeling close to parents, and strata.

Table 47 shows the factors which are associated with ever having smoked tobacco. These factors have all been described before. Apart from having friends smoking there are not very strong associations with any one factor. Coming from Soweto and Private protects against ever having smoked.

Ever Having Smoked

TABLE 47: FACTORS ASSOCIATED WITH EVER HAVING SMOKED

Variable	Odds ratio	95% Confidence limits	p value
Friends smoke	3.522	2.62 - 4.730	< 0.001
Age > = 18 years	1.676	1.116 - 2.518	0.013
Soweto	0.6064	0.4427 - 0.8307	0.002
Standard 9	1.604	1.043 - 2.467	0.031
Not feeling close to one's parents	1.551	1.218 - 1.975	< 0.001
Private	0.6554	0.4532 - 0.9479	0.025
Sex = male	1.354	1.07 - 1.704	0.010

Regular Smoking

Table 48 shows the results of the logistic regression analysis with the dependent variable - smoking at least one cigarette per day. The independent variables were the same as in Table 47, excluding sex. Again the odds are strong that students will have friends who smoke OR: 3.43.

TABLE 48: FACTORS ASSOCIATED WITH REGULAR SMOKING

Variable	Odds ratio	95% Confidence limits	p value
Friends smoke	3.438	1.979 -5.973	< 0.001
Age > = 18 years	2.247	1.137 - 4.442	0.020
Ex HoR	2.099	1.320 - 3.339	0.002
Not feeling close to one's parents	2.058	1.414 - 2.991	< 0.001

4. Discussion

4.1. Demographics of Tobacco Use in High Schools in Johannesburg

Choosing the population as high school students will, as mentioned before, invariably miss the group of youth who may have dropped out of school due to their substance abuse, or who have dropped out for other reasons but started abusing substances and tobacco on the street or in gangs.[56] In addition students who are still at school but are using substances such as alcohol and illicit drugs will usually have a higher absentee rate so will more often be missed by the sample. However it is very difficult and time consuming to reach youth who are not at school so this study concentrated on high school youth.

Almost twelve percent of the sample smokes regularly with 16.5% in the eighteen and over age group. This compares favourably to the Cape Town figure of 18.1%.[50] The studies had similar sampling techniques and thus are comparable. The overall smoking status of South African adults shows a rate of 31.5% smokers in 1992[26] and this has increased to 34% in 1994[6]. The rate in Gauteng is 37% compared to the Western Cape rate of 48%. These results are therefore regionally consistent. The reasons for the higher rates in the Western Cape will be discussed later under the section on race.

The rate in this study also compares favourably to the 18% reported in the United States Surgeon General's Report [20], and 20% in Doncaster, England [42]. However our national adult smoking rates are higher than the United States of America (25%). The rate also compares favourably with schools in Saudi Arabia, where al- Faris found an overall rate

of 17%[57], however the sample did not have any girls so it is not an exact comparison. It is a similar rate to that found in New Zealand where 10% of youth studied smoked daily.[58] The rate in Canada among grade 10 adolescents was 26%, much higher than this study, but was a small sample, and not necessarily representative of Canadian youth.[59] In a rural area of Kerala, India, George found that 2% of students smoked, very much lower than this study. In that area, however 29% of students chewed tobacco[60]. The rate in Japan amongst 12-15 year olds is 2.2% compared to 8.5% for this study[61]

According to the U. S. Surgeon General more than 80% of tobacco use is initiated below the age of 18 years [21] , and 40% of students have tried smoking at some stage, increasing to 50% in the 18 and older age group. If one looks at the smoking rates for standard 10 students (15.3%) and compares this with the adult smoking rates for the region it appears that about 50% of adult smokers become regular smokers after leaving school. There is thus a window of opportunity for prevention programmes (which are very often aimed at children before their first experience of tobacco) designed specifically for young people at the senior high school level who are experimenting with tobacco and have not yet decided to become regular smokers, or have not yet become addicted to tobacco. It may also be useful at this level to offer programmes which encourage youth to stop smoking and which help them develop skills to help them break the addiction. I am not aware of any such programmes in South Africa at present.

4.1.2 Gender

The multivariate analysis shows that males are more likely than females to experiment with smoking by a factor of 1.35. But that sex is not associated with regular smoking. Regular smoking increases with age among Johannesburg boys, from 9.2% in standard 6 to 20.0% in standard 10. In Cape Town Flisher et al showed an increase in regular smoking with age from 11.7% in standard 6 to 27.6% in standard 10.

Among girls in this study there is no increase over the standards, 10.0% in standard 6 and 9.8% in standard 10, whereas in Flisher's study there was an increase similar to that of the boys, from 9.0% in standard 6 to 20.7% in standard 10. Overall the rates in Cape Town are higher than in Johannesburg, and the difference is most marked in the rates of smoking among older girls.

The rates of experimenting with tobacco are consistently lower among girls, but what is interesting is that among the younger age groups - standards 6 and 7 the rates for regular smoking are very similar to those of boys. It is only as the students get older that the rates among females in this study become less than the males. This contradicts a study done in England looking at schoolgirls and smoking. They postulate that as pressure towards fulfilling the female role in our society increases, more and more girls feel inadequate and these feelings are related to starting smoking. They showed that smoking in that setting was related to poor self esteem.[62] Although starting smoking in the Greater Johannesburg context may be related to poor self esteem, it does not increase with age among girls. The gender difference noted with ever having smoked does not occur with regular smoking (Table 13).

The implications for prevention are important, because although more boys experiment with tobacco, it seems that a higher percent of the girls who do experiment go on to become regular smokers. This may be related to the relatively lower level of peer pressure girls are put under to experiment with smoking[63] , in fact having to overcome taboos of girls smoking means that those who try smoking are relatively more committed to the idea, and subsequently become addicted. The lack of gender difference in regular smoking rates may be an indication that the trend is towards those in Western countries, such as England. In Doncaster and in Newcastle studies show higher regular smoking rates among girls .[42,64] In studies in the United States, France and Italy the rates are greater among girls than boys.[65,66]

The above discussion is, however, complicated by race, and possibly class. The rates of smoking among girls among the different strata are very different. (Table 42) With Ex TED and Ex HoR having girls' smoking rates of 14 % while Soweto has a rate of 7.8 % and Private only 3.9% . This is certainly related to the fact that in both Soweto and Private "black African" students predominate and there is still a strong cultural taboo against girls or women smoking. The only stratum where the prevalence of girls smoking was greater than that of boys was in Ex TED (boys 12.0% and girls 14%) although there is no statistical difference. There is also no statistical difference in smoking rates within the strata between sexes. This contrasts strongly with Nelson who finds an association between class and smoking rates among women, with lower class women smoking

more.[67] This association doesn't hold entirely for adolescents in the UK. Glendinning found that social class of the family had little relationship to smoking in middle and later adolescence, but that the class position the adolescents find themselves in plays a role[68]. In South Africa culture still must be a stronger determinant for smoking among women than social class.

The adult data is very different with an overall 7% of women smoking in the country, 27% of white women, 10% of black women and 59% of coloured women smoking[6]. The rates among men are much higher except amongst "coloureds" viz. white men 43%, black men 53% and coloured men 58%. The overall smoking rate among adult men in South Africa is 52%. The discrepancy between the adult rates and the school rates are great and there may be some influence which acts on men and some women when they leave school which does not influence other women. Alternately the present smaller differences between boys and girls at school may mean that there will be higher smoking rates among women in the future.

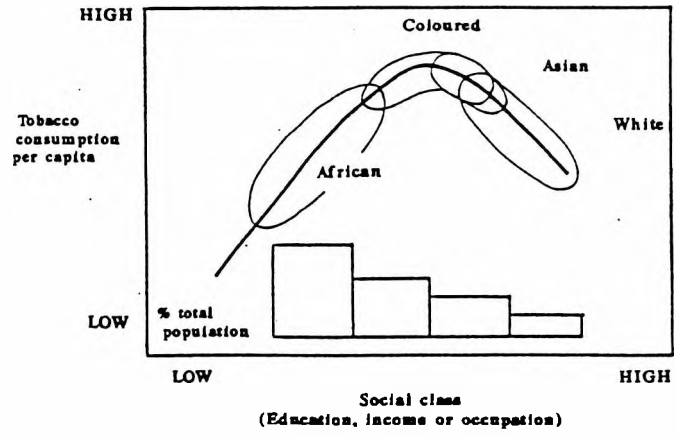
Taking into account the differences between the strata it is still clear that the rates of regular smoking are similar across the strata in the Greater Johannesburg area, and any programmes should take young girls' needs into account as much as those of young boys. It is also necessary to follow the changing nature of our society and to ensure that aspirations, especially of girls, to become "westernised" and "liberated" are understood and incorporated into prevention programmes.

4.1.3 Race[a]

Multivariate analysis shows that belonging to Soweto or Private strata is protective for "ever having smoked", while belonging to Ex HoR increases one's chances of smoking regularly by a factor of 2.

This study shows similar racial patterns to those seen in studies among adults in South Africa. There are the highest rates of smoking among the "coloured" students(Ex HoR) followed closely by the white students (Ex TED) and then the lowest rates among the black students(Soweto and Private). There is a complex interplay between race, class and tobacco use in South Africa. The figure below after Derek Yach shows the interaction of race and class and tobacco consumption. [12] The diagram illustrates that the effect is manly one of social class which is confounded by race.

FIGURE 1. SIMPLIFIED RELATIONSHIP BETWEEN TOBACCO CONSUMPTION, SOCIAL CLASS AND RACE IN SOUTH AFRICA.



[a] The term race is not here used in the anthropological sense, rather it is used to reflect the classifications of the apartheid government, to help tease out determinants as they relate to past inequalities.

According to Yach the whites have shown a decline in smoking over the past 15 years, but more in the 16 -24 year age group and among those with a university education. The model shows that the higher the class the more people smoke up to a certain point, after which there is a decline in smoking rates. The class situation in South Africa is so designed that the various race groups are in a continuum along the class line. This is however changing, and unfortunately as the class situation of black people improves so will the rates of smoking initially increase. It is only much later that the rates will decline. The good news is that black African women have not increased their smoking rates over the past 15 years which suggests that they are particularly resistant to taking up smoking. However the rates among black African girls in this study's Soweto is 7.8 % which is very close to Steyn's 8.4%[69] or the MRC's 10% [6], but substantially higher than the Rocha-Silva's 4.6% (for urban areas) [10]. If as mentioned above almost 50% of regular tobacco smoking occurs soon after leaving school then the rates for women in the greater Johannesburg area, especially black and coloured women will be a lot higher than previous estimates. One must remember however that the MRC's estimate is a national one and therefore includes the rural areas where one would expect much lower smoking rates. In fact the Rocha-Silva study could not give a figure for black rural girls between 10 and 21 years because of small numbers. The opportunity therefore exists for primordial prevention amongst young black school girls, and health workers should be vigilant against attempts by the tobacco industry to open the black female "market".

4.2 Peer Pressure

Apart from demographic there are many variables which are postulated to influence, or be associated with the use of tobacco. These are social factors such as parental influence and peer pressure, advertising and promotional pressures. The use of tobacco is also related to the use of other substances and is often regarded as a gateway drug.

Having friends who smoke is the strongest predictor of whether a student in the Greater Johannesburg area will either experiment with smoking or become a regular smoker (Tables 22 and 23). Substance use is primarily a social activity for adolescents [31] , that this is the case amongst adolescents in Johannesburg is clear. What is more the students feel helpless in the face of peer pressure:

> *"its the fashion at our school to drink and smoke"*
>
> *"and then you don't feel out of place like you don't say no like you're not one of them"*
>
> *"it depends if you want to fit in"*
>
> *"all our friends smoke so we smoke with them"*
>
> *"you can't say no"*

The Rocha-Silva study describes young people finding themselves in an environment where there is social support for alcohol/drug use (including tobacco), exposure and peer pressure to use it and limited discrimination against the use of alcohol and drugs. In

addition she reports that the initiation into drinking/smoking of cigarettes/tobacco tended to occur in uncontrolled rather than controlled social circumstances, with friends being particularly the suppliers. Strebel et al found peer pressure closely associated with smoking, with an odds ratio of 5.7(95% confidence interval 3.5-10.4) [70] Other studies report a strong association of peer pressure with smoking, sometimes it is the most important determinant, and sometimes it is only the second or third most important determinant of smoking [52, 60, 71].

The Surgeon General's report of 1994 *Preventing Tobacco use among young people* describes pressure from peers, siblings and friends as powerful influences. He goes further to say that young people are sensitive to perceived signals that smoking is the norm. These signals include visible public smoking, the availability of cigarettes to minors, and the widespread promotion and advertising of tobacco products. It is understandable when we come across adolescents with this kind of confusion:
This study shows that 83% of white, 68% of coloured and between 50 and 60% of black students believe that their friends smoke. Clearly these are much higher rates than the reported rates of smoking, especially those of regular smoking. Students should be disabused of the notion that their peers smoke by reporting the true rate of smoking to eliminate the misconceptions which serve to strengthen peer pressure to smoke.

Having friends who smoke does not only have a strong relationship with smoking, but also the student's ever having used alcohol (RR 2.31: 95% CI 1.96, 2.73) and to binge

drinking (taking 5 or more drinks on any one occasion in the previous week) (RR: 2.19 (95% CI 1.53, 3.14) This association is most likely due to the relationship between the use of tobacco and the use of alcohol.

4.5 Other Social Risk Factors Influencing Smoking in Greater Johannesburg Schools

4.5.1 Family disorganization

Apart from peer pressure a number of other social risk factors were investigated which may have a relationship with the use of tobacco in young people. The structure of the family is often cited as an influence on whether young people smoke [67]. The Surgeon General's report states that in the United States young people who come from a low-income family and have fewer than two adults living in their household are especially at risk for becoming smokers. [8,35] This study confirms that there is an association between the family type and regular smoking.

It is often thought that parents as role models influence their children to smoke. Having an adult smoker in the home is thought to play a role in the smoking rates of young people. In this study however it seems that young people experiment more if there is an adult smoker at home, but there is not a statistically significant relationship with regular smoking. This is borne out by the Strebel study in Cape Town where they found no intergenerational influence on smoking [14].

The one family social indicator which remained independently associated with smoking, both with experimenting, and with regular smoking is the perception of feeling close to one's parents. This is an indicator of how the family is functioning, and is also an indicator of the influence parents may have on their children. If students do not feel close to their parents they have a 1.55(95% CI 1.21 - 1.97) chance of experimenting with smoking. They also have a 2.05 chance of smoking regularly (95% CI 1.41 - 2,99). Although this is not necessarily a causal relationship it is clear that it could be used as an indicator to determine those at risk. It is also probably causally related to the further use of other substances. [16]

It is important to note that students did not see their parents as a refuge when faced with a problem (page 31). This is worrying if being close to one's parents is protective against the use of tobacco and other substances. This finding is similar to Disler in Cape Town, who, despite a rather more middle class sample, found a low level of trust and ability to confide in parents[72]. There are important health promotion implications in this issue. Parents should perhaps be a more vigorous target for campaigns, focusing on parenting skills and ways in which parents can be more effective guides to their children. In addition perhaps services should provide counselling services for adolescents when parents are unable or unwilling to give the appropriate support and guidance. This is supported by the work done in New Orleans which shows that children whose parents had spent more time with them and communicated more with them more frequently had lower onset rates of using alcohol and tobacco.[73]

4.4 Tobacco use and the use of other substances

The use of tobacco is associated with the use of alcohol, both for experimenting with alcohol and for binge drinking (section 3.5). It is even more strongly associated with the use of dagga, the use of solvents, and the use of Mandrax as well as the use of "other" drugs which includes a range of substances from magic mushrooms to LSD. The associations are all stronger for ever having smoked than for regular smoking. This implies that trying smoking is partly sensation seeking and that experimenting, sensation seeking applies to other substances too. The association between smoking and other substance use is well documented and led to Kandel's "gateway" theory[20, 32]. The theory states that there are three sequential stages of initiation into the use of drugs: hard liquor, marijuana and other illicit drugs. Prior involvement with minor delinquency, cigarette, beer and wine use are antecedents for hard liquor use. She does not assume however that once started with the lowest drug that adolescents will necessarily proceed through the whole sequence.

The Surgeon General's report states that nicotine is generally the first drug used by young people who use alcohol, marijuana and harder drugs. He further states that adolescent tobacco use is associated with being in fights, carrying weapons and engaging in higher - risk sexual behaviour[21].

This study confirms these findings, which have major implications not only for tobacco control programmes, but also for substance abuse prevention programmes, anti violence programmes and sexuality programmes among youth.

4.5 Implications for Health Promotion and Recommendations

4.5.1 Healthy Public Policy

The Government of National Unity has begun the legislative reform process around tobacco. Through the Tobacco Products Control Act of 1993 a number of issues have been addressed. Firstly the act enables local authorities to restrict smoking in public places, secondly it provides for health warnings on all tobacco products, as well as on all advertising for tobacco, thirdly it prohibits the sale or supply of tobacco to any child under the age of 16, whether for his own use or not, and finally it enables a number of further regulations regarding vending machines and the composition of the tobacco product.[74] This is, however, probably not sufficient to have an impact on the smoking rates in the country. The National Council Against Smoking argues that young people are very price sensitive when it comes to cigarettes, and that the relative price of cigarettes is very low in this country.[75] Therefore to prevent young smoking and finding cigarettes so easily accessible one needs to increase the price of cigarettes. Excise tax on tobacco increases the cost of tobacco and thus makes it less available to young people, and the

Canadian experience shows a 40% decline in tobacco consumption even after factoring in smuggling. [76]

Banning the use of vending machines also decreases the availability of tobacco to young people, the vending machines allow access to those under 16 even if the ban on sale to minors is vigorously enforced. The ban on the sale of tobacco to children under 16 is very difficult to enforce, and this study shows clearly that students younger than 16 still have free access to tobacco.

Advertising still plays a major role in enticing young people to smoke.[77,78] Stopping advertising is an important step in tobacco control, but one also has to be aware of below the line activities (such as sports sponsorship, sponsorship of concerts etc.). The Act stops short of banning advertising and has in no way addressed the below the line activities. The warnings on tobacco products may help clear up some of the confusion about where messages are coming from which was expressed by some students in this study.

Recommendations: I. The government needs address the below the line advertising through banning sponsorship of sport and music events, and providing alternative sponsorship, possibly raised through excise tax, as it is done in the Victoria model in Australia[17].

II. The excise tax on cigarettes should be increased making cigarettes less accessible, especially to young people.

4.5.2 Creating Supportive Environments

This study shows that the environment is supportive of smoking. Peer pressure is great and smoking is freely allowed in most places, especially those for teenage entertainment. The perceived peer norm needs to be corrected by letting young people know that the vast majority of their peers are not smoking. We also need to let them know that although many adults are smoking the majority have tried to give up smoking.

The provision of supportive environments, such as drug/tobacco free entertainment or recreation centres, are very important and should be seen as part of the Reconstruction and Development Programme.

The fact that smoking is conceptualised as an adult activity may be a serious problem for the tobacco control lobby. It seems that although very high percentages of young people experiment with cigarettes while still at school, the bulk of smoking commences soon after leaving school. The initiation into adulthood may include the use of cigarettes and this may be the most serious danger phase for starting smoking in the Greater Johannesburg Area.

Recommendation: I. A social climate needs to be created where smoking is conceptualised as a particularly childish thing to do, and that it is the mature adults who do not smoke. There needs to be a lot of counter advertising, and lobbying of the media to accomplish this task.

4.5.3 Developing Personal Skills

Many skills which are needed to reduce smoking rates are lacking. The skills necessary to interpret advertising and what it is trying to do seems to be lacking in these youth. Interpersonal skills such as refusal skills and the building of self esteem need to be developed. The confusion about where information is coming from needs to be addressed, with strong messages coming from the state and the school system about the harmful effects of smoking.

Smoking or experimenting with tobacco could be used to help identify high risk children, as could the perceived feeling of closeness to parents.

Recommendations: I. Smoking education needs to be integrated into the school syllabus and schools should be smoke free places.

II. Parenting skills which include communication skills need to be taught to both parents and students (as future parents).

III. The skill development programmes need to be integrated with sexuality, and other substance abuse programmes. The anti-substance abuse lobby needs to take tobacco on board, not only because of its own serious health risks, but also as an important step in the gateway to other drugs.

IV. Education and skills development programmes should take into account that many high school students have first hand experience of smoking, and many are addicted to cigarettes. Programmes should thus include skills for giving up smoking.

4.5.4 Supporting Community Action

Many community action anti-smoking lobbies have been relatively successful [79], given the extent of peer pressure and the history of youth activism in South Africa, this option for spreading the anti-smoking movement is relatively unexplored in South Africa. Peer educators and peer counsellors are methodologies used in other health areas, but youth health activism has not emerged as a major phenomenon as yet. In Australia the BUGGA UP campaign involving medical students was a campaign of defacing billboard advertisements[80]. This particular campaign was illegal, but advocacy and lobbying for smoke free environments could be part of youth organisation activities.

4.5.5 Reorienting the Health Services.

In terms of smoking education the services need to note that it is not information which students need to decrease smoking rates, but support for the above four actions. The health department needs to play a central role in getting smoking integrated into other programmes against substance abuse and in sexuality education programmes.

Health and support services for adolescents are almost non existent. Health services should woo adolescents and provide outreach into schools not only for education, but for counselling and support to give up tobacco.

Recommendations: I. Health education campaigns and programmes need to address the important issues faced by the target community.

II. The health services should be active in working with teachers to identify 'at risk' students and to spend time with such students, perhaps developing specialised programmes directed at them.

5. Conclusion

This study will serve as a baseline for interventions around cigarette smoking among high school youth in the Greater Johannesburg area. The Johannesburg Metropolitan Council has a tobacco control programme which has a number of aspects to it. One arm is the enforcement of the new Tobacco Control Act which prohibits the sale of tobacco to people under 16. This study was conducted prior to the Act and could serve as a baseline against which to evaluate the effect of intervention programmes.

Some of the factors relating to the smoking of cigarettes have been unravelled, and the health promotion implications have been spelled out. There needs to be further research into the factors influencing starting smoking in the period immediately after students leave school as this may be a high risk time for initiating regular smoking. Overall the smoking rates in Johannesburg schools are not as high as they are in other parts of the country. This means that there is an important window of opportunity for prevention of smoking in Johannesburg schools, and thus preventing the consequences of smoking later in life.

[1] Dr N P Napalkov, Assistant Director-General World Health Organisation. Speech on World no Tobacco Day, 1994. *Tobacco Alert* : July 1994.

[2] World Bank World Development Report 1993: Investing in Health. Oxford: Oxford University press: 1994

[3] World No Tobacco Day, 31 May 1995. *Health Facts about Tobacco*. World Health Organisation, Geneva Switzerland

[4] Barnum H. Priorities for Controlling the Global Economic Impact of Tobacco. *Proceedings of the All Africa Conference on Tobacco or Health* . 14-17th November 1993. Harare. Zimbabwe. Edited by: D Yach and S Harrison

[5] Kabwe A. Women and Tobacco: Trends and Prospects in Developing Countries *Proceedings of the All Africa Conference on Tobacco or Health* . 14-17th November 1993. Harare. Zimbabwe. Edited by: D Yach and S Harrison

[6] Yach D, Reddy P., Weitz AM. MRC / HSRC Survey 1995: Key National Findings. *Release on World no Tobacco Day 1995.*

[7] Dr Y Saloojee, Director National Council against Smoking - Personal Communication

[8] RDP

[9] Bartecci CE, Mackenzie TD, Schreier RW. The Human Costs of Tobacco (First of Two Parts) *N Engl J Med*. 1994; 330 (13): 907-912

[10] Bartecci CE, Mackenzie TD, Schreier RW. The Global Tobacco Epidemic. *Scientific American* May 1995: 26-33

[11] Doll R., Peto R., Wheatley K., Gray R., Sutherland I. Mortality in relation to smoking: 40 years' observations on male British doctors. *BMJ* 1994;309: 901-911

[12] Yach D, Saloojee Y, McIntyre D. *Smoking in South Africa: Health and Economic Impact.* MedTech. Cape Town 1992

[13] Boyle P. The Hazards of Passive - and Active - Smoking. *N Engl J Med* 1993;328 1708 - 1709

[14] Chilmonczyk BA., Salmun LM, Megathlin KN., Neveux LM., Palomaki GE., Knight GJ., Pulkkinen AJ., Haddow JE. Association between exposure to environmental tobacco smoke and exacerbations of asthma in children. *N Engl J Med* 1993;328 1665 - 1669

[15] Ferris BG Jr, Ware JH, Berkey CS, Dockery DW, Spiro AIII, Speizer FE. Effects of passive smoking on health of children. *Environ Health Perspect* 1985; 62: 289 - 95

[16] World Health Organisation .*The Ottawa Charter for Health Promotion* Ottawa 1986

[17] Galbally R. *Tax Harm for Health: Steps to Establish a dedicated levy on Tobacco products for a Health Promotion Foundation*. August 1993. Paper presented to a meeting in Johannesburg.
[18] Saloojee Y. Tobacco Control: A Case Study. *Proceedings of the All Africa Conference on Tobacco or Health* . 14-17th November 1993. Harare. Zimbabwe. Edited by: D Yach and S Harrison
[19] MacFarlane A. Health Promotion and Children and Teenagers Why it is mainly the government's responsibility. BMJ 1993; 306:81
[20] Summary of Tobacco Control Workshop Held at the Medical Research Council, Pretoria, 7 August 1995.
[21] *Preventing Tobacco use among Young People*. A Report of the Surgeon General. U.S. Department of Health and Human Services. Public Health Service. Centre for Disease Control and Prevention. National Centre for Chronic Disease Prevention and Health Promotion. Office on Smoking and Health. 1994
[22] National Council Against Smoking. Tobacco Control in South Africa: The Key Issues. 1994
[23] Flay BR, Brannon BR, Johnson CA, Hansen WB, Ulene AL, Whitney-Saltiel DA, Gleason LR, Sussman S, Gavin MD, Glowacz KM, Sobol DF, Spiegel DC. The Television School and Family Smoking Prevention and Cessation Project: Theoretical Basis and Program Development *Preventive Medicine*. 1988;17:585-607
[24] Robinson R G. Tobacco and African Americans in the United States: Lessons for Africa. *Proceedings of the All Africa Conference on Tobacco or Health* . 14-17th November 1993. Harare. Zimbabwe. Edited by: D Yach and S Harrison
[25] Yach D. World No-Tobacco Day: 31st May 1995. *Control Tobacco for Sound Economic Reasons*. Press Release.
[26]Elders M.J., Perry C.L., Eriksen M.P., Giovino G.A. The Report of the Surgeon General: Preventing Tobacco Use among Young People. *Am J Public Health* 1994;84 (4):543-547.
[27] Dusenbury L, Botvin G J. *Journal of Addictive Diseases* 1992;11(3):29-45.
[28] Flyn BS, Worden JK, Secker-Walker RH, Pirie PL, Badger GJ, Carpenter JH, Geller BM. Mass Media and School Interventions for Cigarette Smoking Prevention: Effects 2 Years after Completion. *Am J Public Health*. 1994;84(7):1148-1150
[29] Pentz MA, MacKinnon DP, Flay BR, Hansen WB, Johnson CA, Dwyer JH. Primary Prevention of Chronic Diseases in Adolescence: Effects of the Midwestern Prevention Project on Tobacco Use. *Am J Epidemiol*. 1989; 130 (4): 713-724
[30] Chou S P, Pickering R P. *Br j Ad* 1992;87:1205-1206
[31] Friedman H L. The Health of Adolescents: Beliefs and Behaviour. *Soc. Sci. Med* 1989;29(3):309-315
[32]Kandel D B, Kessler R C, Margulies R Z. Antecedents of Adolescent Initiation into Stages of Drug Use: A Developmental Analysis. *J of Youth and Adolescence* 1978;7(1):13-40.
[33]Bailey G W. Current Perspectives on Substance Abuse in Youth. *J Am Academy of Child and Adolescent Psychiatry* 1989;2:151-162
[34]Richardson J L,Radziszewska B, Dent C W, Flay B R. Relationship Between After-School Care of Adolescents and Substance Use, Risk Taking, Depressed Mood, and Academic Achievement. *Paediatrics* 1993;92(1):32-38
[35]Smith C, Nutbeam D. Adolescent Drug use in Wales. *Br Journal of Addiction* 1992;87:227-233
[36]Gfoerer J, De La Rosa M. Protective and Risk Factors Associated with Drug Use among Hispanic Youth. *Journal of Addictive Diseases* 1993;12(2)
[37]Sharp D J,Lowe G. Adolescents and alcohol- a review of the recent British research. *Journal of Adolescence* 1989;12:295-307
[38] *Tobacco Advertising and Promotion , A guide to Developing Policy*. ASSIST. U.S. Department of Health and Human Services. November 1994
[39] MRC, Johannesburg Survey. Unpublished.
[40] Research by Soul City. Unpublished
[41] Abdulrahim D, White D, Phillips K, Boyd G, Nicholson J, Elliot J. *Ethnicity and Drug use: Towards the design of community interventions*. North East Thames regional Health Authority. 1994
[42] Galt M., Gillies P., Scott A. Smoking prevalence among 15-16 year olds in Doncaster, England. *J of Public Health Med* 1994; 16 (2): 172-178.

[43] Sasco A. Women and Tobacco: A Global Perspective *Proceedings of the All Africa Conference on Tobacco or Health* . 14-17th November 1993. Harare. Zimbabwe. Edited by: D Yach and S Harrison
[44] Gauteng Education Department, Personal Communication.
[45] Hispanic Health Council. *Focus Group Manual, A Training Guide*. The Northeast Hispanic AIDS Consortium Assessment of Hispanic Communities at Risk for AIDS Project. 1990
[46] Basch CE. Focus Group Interview: An Under-utilised Research Technique for Improving Theory and Practice in Health Education. *Health Education Quarterly* 1987;14 (4):441-448
[47] Bass LE, Kane-Williams E. Stereotype or Reality: Another Look at Alcohol and Drug use Among American Children. *Public Health Reports* 1993; 108: Supp 1: 78-83
[48] Strauss AL. *Qualitative analysis for social scientists*. Cambridge, U.K. 1987. Cambridge University Press.
[49] Measuring the Health Behaviour of Adolescents: The Youth Risk Behaviour Surveillance System and Recent Reports on High Risk Adolescents. *Public Health Reports* 1993;108: Supp 1.
[50] Flisher AJ, Ziervogel C F, Chalton D O, Leger P H, Robertson B A. Risk Taking Behaviour of Cape Peninsular high-school students. Part III. Cigarette smoking. *S Afr Med J* 1993; 83: 477-479
[51] *dBase IV* Ashton -Tate Corporation. 1990
[52] *Epi Info version 6.02* World Health Organisation, Geneva. 1994
[53] *Egret*. Revision 3. Statistics and Epidemiology Research Corporation, Seattle. 1991
[54] Medina -Mora M E. Surveys That Work and What They Show in Mexico. *Journal of Addictive Disease* 1991; 11(1): 23-32
[55] Thombs DL, Beck HB, Mahoney CA, Bromley MD, Bezon KM. Social Context, Sensation Seeking, and Teenage alcohol Abuse. *Journal of School Health* 1994;64 (2):73-79.
[56] Flisher AJ, Chalton DO. High-school dropouts in a working-class South African community: selected characteristics and risk-taking behaviour. *Journal of Adolescence* 1995;18:105-121
[57] al-Faris EA. Smoking habits of secondary school boys in rural Ridadh. *Public Health*. 1995;109 (1):47-55
[58] McGee R, Williams S, Stanton W. Smoking among New Zealand adolescents 1969-1993. *N Z Med J* 1995;108 (995):85-87
[59] Small SP. The smoking behaviour of grade 10 students. *Can J Cardiovasc Nurs*. 1994;5 (2):3-10
[60] George A,Varghese C, Snakaranarayanan R, Nair MK. Use of tobacco and alcoholic beverages by children and teenagers in a low income community in south India. *J Cancer Educ*. 1994;9(2):111-113
[61] Wada K, Fukui S, Prevalence of tobacco smoking among junior high school students in Japan and background lifestyle of smokers. *Addiction* 1994;89(3):331-343
[62] Piepe T,Cattermole B, Charlton P, Morey F, Morey J, Yerrel P. Girls, smoking and self-esteem - the adolescent context. *Health Education Journal*. 1988;47(2,3):83-85
[63] Rocha -Silva L, de Miranda S, Erasmus R. *Alcohol/drug use and related matters: Young Black South Africans (10-21 years)*. HSRC Pretoria 1995
[64] Gilvarry E,McCarthy S,McArdle P. Substance use among schoolchildren in the north of England. *Drug Alcohol Depend* 1995;37(3):255-259
[65] Sasco AJ, Pobel O, Benhaim V,de Bruin K, Stiggelbout A, Tuyns A. Smoking habits in French adolescents. *Rev Epidemiol Sante Publique*. 1993;41(6):461-472
[66] La Veccia C, Decarli A, Pagano R. Patterns of smoking initiation in Italian males and females from 1955 to 1985. *Prev Med*. 1995; 24 (3):293-296
[67] Nelson KP, Ford RP, Wild CJ. Women in Low income groups smoke more: Cantebury 1976 - 92. *N Z Med J* 1995;108 (998):148-150
[68] Glendinning A, Shucksmith J, Hendry L. Social class and adolescent smoking behaviour. *Soc Sci Med*. 1994;38 (10):1449 -1460
[69] Steyn K, Jooste PL, BourneL, et al. Risk factors for coronary heart disease in the black population of the Cape Peninsula (CRISIC study) *S Afr Med J* 1987;71:145-148
[70] Strebel P, Khun L, Yach D. Determinants of cigarette smoking in the black township population of Cape Town. *Journal of Epidemiology and Community Health*. 1989; 43:209-213

[71] Morris GS, Vo AN, Bassin S, Salvaglio D, Wong D. Prevalence and sociobehavioural correlates of tobacco use among Hispanic children: the Tobacco Resistance Activity Programme. *J Sch Health*. 1993;63 (9): 391-396

[72] Disler S.A. *Health Related Lifestyles of Adolescents*. Masters Dissertation. University of Cape Town. 1991

[73] Cohen DA, Richardson J, La Bree L. Parenting behaviours and the onset of smoking and alcohol use: a longitudinal study. *Paediatrics* 1994;94 (3):368-375

[74] Tobacco Products Control Act No. 83, 1993. *Government Gazette*: 14916, 2 July 1993

[75] Saloojee Y. *Tobacco Control in South Africa: The Key Issues*. National Council Against Smoking.

[76] Sweanor D. Killing Taxes and Canadians. Canadian Journal of Public Health .1994; 85(2): 78-79

[77] Pierce JP, Gilpin E, Burns D, et al. Does tobacco advertising target young people to start smoking? *Journal of the American Medical Association*. 1991;266 (22):3154-3158.

[78] Laugesen M. Tobacco advertising bans cut smoking. *British Journal of Addiction*. 1992; 87:965-966

[79] Robinson RG Pertschuk M, Sutton C. Smoking and African Americans. In: Improving the Health of the Poor

[80] Dr S Donahue, Personal communication

Appendix 1

Focus Group Guide Used in This Study

Discussion Guide for Substance Use Research Project in Johannesburg High Schools

Question: What do you think and feel about any drugs or substances that can make you feel different?

Exposure to friends who smoke or drink

Reasons young people drink or smoke

Difference between alcohol and other drugs

Exposure to friends who use other drugs

Time and place of drug use

Which drugs and their availability

How people become involved in their use

Statements about drugs students know to be untrue

Sources of information about substances

Impact of television, radio and other media

Who do you trust, who do you go to with a problem

Appendix 1

Focus Group Guide Used in This Study

DEPARTMENTS OF COMMUNITY HEALTH - UNIVERSITY OF THE WITWATERSRAND AND JOHANNESBURG HEALTH, HOUSING AND URBANISATION DIRECTORATE

Please answer as honestly as possible, all information will be absolutely confidential. Fill in answers on lines or tick the correct place

1. How old are you? ☐☐ years ☐☐

2. What is your sex? FEMALE ☐ MALE ☐ ☐

3. Do you live with:

Both parents ☐ one parent ☐

neither parent ☐ other (explain) ☐ ☐

4. At home is there money for food and schooling:

always enough money ☐ sometimes enough ☐

never enough ☐ ☐

5. What is your home language? ☐

_____

6. What Standard are you in? ☐

_____

7. Do your parents or adults you live with smoke cigarettes?

mother ☐ father ☐ other ☐ ☐

8. Do either of your parents drink alcohol?

MOTHER: never ☐

occasionally ☐

once a week ☐ ☐

three times week ☐

more than three times a week ☐

FATHER: never ☐
occasionally ☐
once a week ☐
three times week ☐
more than three times a week ☐

9. Have you ever seen one of your parents drunk?
never ☐ sometimes ☐ often ☐ every day ☐

10. Are you close to your parents?
Yes ☐ No ☐ Don't know ☐

11. Do any of your friends smoke cigarettes?
Yes ☐ No ☐ Don't know ☐

12. Have you ever smoked cigarettes?
Yes ☐ No ☐

13. Do you want to start smoking?
Yes ☐ No ☐ Don't know ☐

14. Do you smoke at least one cigarette per day?
Yes ☐ No ☐

15. Have you ever tried stopping?
Yes ☐ No ☐ Don't know ☐

16. What brand do you smoke?

_____

17. Apart for religious reasons, have you ever used alcohol?
Yes ☐ No ☐

IF NO GO TO QUESTION 19
IF YES ANSWER QUESTION 17(page 3)

18. How many times have you had 5 or more drinks on one occasion in the past 2 weeks ☐☐

19. List the illegal drugs that you know about ☐☐

---

20. Do any of your friends smoke dagga? ☐

Yes_____ No _____ Don't know _____

21. Do any of your friends smoke Dagga and Mandrax together? ☐

Yes ☐ No ☐ Don't know ☐

22. Do any of your friends inject drugs? ☐

Yes ☐ No ☐ Don't know ☐

23. Do any of your friends take any other drugs? ☐

Yes ☐ No ☐ Don't know ☐

24. Have you ever smoked dagga? ☐

Yes ☐ No ☐

IF NO GO TO QUESTION 28, IF YES GO TO QUESTION 25

25.How many times have you done so in the last week ☐☐

26 Have you ever smoked dagga and Mandrax together? ☐

Yes ☐ No ☐

IF NO GO TO QUESTION 28, IF YES GO TO QUESTION 27

27.How many times have you done so in the last week ☐☐

28. Have you ever sniffed glue, thinners or petrol? ☐

Yes ☐ No ☐

IF NO GO TO QUESTION 30, IF YES GO TO QUESTION 29

29. How many times have you done so in the last week ☐☐ ☐

30. Have you ever used injectable drugs? ☐

Yes ☐ No ☐

IF NO GO TO QUESTION 32, IF YES GO TO QUESTION 31

31, How many times have you done so in the last week ☐☐ ☐

32 Have you ever used any other drugs? ☐

Yes ☐ No ☐

IF YES GO TO QUESTION 33, IF NO GOT TO QUESTION 35

33. What are they? ☐

_____

34. How many times have you done so in the last week ☐☐ ☐

35.· Is there anything that you want to add?

_____

_____

_____

Thank you
Please remember to seal your questionnaire in the envelope provided