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Drug use among secondary school students in Senegal

Arne H. Eide, Ibou Diallo,

Ibrahima Thioub & Lajla Blom

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SINTEF Unimed
NIS Health Services Research

Address: P.O.Box 124, Blindern
0314 Oslo NORWAY
Location: Forskningsveien 1
Telephone: +47 22 06 73 00
Fax: +47 22 06 79 09

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AUTHOR(S)

Eide, Arne H., Diallo, I., Thioub, I., Blom, L.

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ABSTRACT

A representative survey on drug use was conducted among students at Upper Level Secondary Schools in Senegal in 1998/99. A net sample of 2952 students were drawn through a two-stage random sampling procedure. Pronounced gender differences in use of tobacco, alcohol, cannabis and inhalants were demonstrated. 58.1 % of the boys and 20.9 % of the girls reported to have tried smoking at least once. For the other main drugs, the corresponding figures were 25.9 % and 18.1 % for alcohol, 12.0 % and 0.8 % for cannabis, and 9.7 % and 3.2 % for inhalants. Experience with alcohol is particularly low, whereas lifetime experience with smoking was relatively high in this population. More frequent use was shown to be low. Bivariate analyses demonstrated a general increase in drug use with increased level of urbanicity and socio-economic status. Sensation seeking and significant others drug use and western cultural orientation were shown to predict drug use, whereas a cultural orientation towards the Senegalese cultural context was negatively associated with use. When analysing the four drug types separately, differences were found that indicate variations in how increased use may develop.
The study has established base line data that may be a point of departure for monitoring development of adolescent drug use in Senegal. It has further generated context specific knowledge that should be taken into account when designing prevention strategies in this context.

DRUG USE AMONG SECONDARY SCHOOL STUDENTS IN SENEGAL

A REPRESENTATIVE SCHOOL-BASED SURVEY

By

Arne H. Eide[1]
SINTEF Unimed

Ibou Diallo[2]
FORUT Senegal

Ibrahima Thioub[2]
FORUT Senegal

Lajla Blom
FORUT Norway

Contact addresses: [1] SINTEF Unimed, P.O.Box 124 Blindern, N-0314 Oslo, Norway
Telephone: 47 22067608, Fax: 47 22067909
e-mail: arne.h.eide@unimed.sintef.no

[2] FORUT Senegal, Avenue Cheikh Anta Diop x Canal IV, B.P. 8482
Dakar Yoff, Senegal.
Telephone: 221 8210771, fax: 221 8239772
e-mail: forutsen@telecomplus.sn

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FOREWORD

This study was initiated by FORUT[1] in 1998 in order to create baseline data on adolescent drug use that was lacking in Senegal. Such data may be useful both in giving directions for design of prevention programs and as a first step to enable monitoring the development of drug use among the young generation. FORUT Senegal targets particularly young people with their alcohol and drug prevention messages.

Mr. Ibou Diallo has been the co-ordinator of the study from October 1998, being responsible for all practical details as well as holding the pieces together throughout the process lasting from September 1998 to April/May 1999. Seniro Researcher Arne H. Eide at SINTEF Unimed has been responsible for the study design and analyses.

Permission to carry out the study was given by the Ministry of National Education. An advisory group was formed in October 1998, comprising individuals with backgrounds from research, teaching and Government;

Tening Niang	Ph.D. student, Sociology, University of Dakar
Aboubakry Mbodj	Ph.D. student, Sociology, University of Dakar
Mohamed Habib Camara	Historian, teacher in secondary school, member of GEEP
Bakary Djiba	Statistician, Public Department of Statistic (Ministry of Economic and Finance)
Racine Senghor	Director of the Secondary Teaching (Ministry of National Education)
Ibrahima Diallo	Historian, Co-ordinator of the study, FORUT Senegal
Ibrahima Thioub	Historian, Supervisor of the study University of Dakar, FORUT Senegal
Arne H. Eide	Social scientist, SINTEF Unimed

1. ---

[1] FORUT (Campaign for Development and Solidarity) is a Norwegian based NGO that is engaged in development cooperation in Sri Lanka, India, The Maldives, Senegal, The Gambia, sierra Leone and Nepal. FORUT was established by the Norwegian peace and temperance organisations IOGT, Juvente and IOGT Junior. More information: http://www.iogt-international.org/forutnorway/

The group had two meetings in the initial stage of the study, providing useful discussions and advise to the co-ordinator on the various steps of the process. The advisory group also played a role in the interpretation of results and in discussions on their implications for future strategies in the prevention of adolescent drug use in Senegal.

1. SUMMARY

A representative survey on drug use was conducted among students at Upper Level Secondary Schools in Senegal in 1998/99. A net sample of 2952 students were drawn through a two-stage random sampling procedure, yielding a sample of around 6 %.

Standardised procedures were followed during data collection.

The sample comprised 41 % girls, reflecting the uneven gender balance in Upper Level Secondary School. Mean age for girls was 18.8 years and for boys 19.0 years. Differences in urbanicity, parents' level of education and material resources at home indicated that the girls in the sample came from families with higher socio-economic status than the boys.

Pronounced gender differences in use of tobacco, alcohol, cannabis and inhalants were demonstrated. In general, experience with use of these drugs were low when compared to studies in other African countries, with the exception being smoking. Close to 60 % of boys and more than 20 % of girls reported that they had ever tried to smoke, and the proportion of daily smokers among boys was 8.6 %. Not more than 14.6 % of the boys had taken any alcohol during the last 12 months, whereas the corresponding figure for girls was below 9.9 %. While drug use in general increases with higher levels of urbanicity, this was not shown to be the case for alcohol. Experience with drug use did increase with socio-economic status for all four drugs. Alcohol type preferences was found to vary with gender, socio-economic status and urbanicity. With respect to imported wine and domestic wine (palm wine) or beer, girls reported experience on level with boys, whereas boys had more experience with clear beer, imported and domestic spirits. Prevalence of clear beer, imported wine and spirits increased with social status, whereas the opposite was the case for domestic alcohol. Experience with clear beer and domestic alcohol was reduced with higher socio-economic levels, whereas the opposite was the case for imported wine. A certain pattern was thus revealed, distinguishing between domestic alcohol types and clear beer on one hand and imported alcohol types on the other. Clear beer is the alcohol type that is most strongly associated with having ever been intoxicated. The proportion of boys who said that they had ever been drunk was 8.6 % as compared to 4.1. % for girls.

In general, use of alcohol, tobacco and cannabis is not very common in the social environment of the respondents. They are, nevertheless, exposed to drug use to some extent, largely through friends and class mates, to a lesser degree at home.

A cultural orientation scale was constructed on basis of previous experience from studies in Zimbabwe. A large number of items measuring consumption of cultural messages through radio, television, cinema, video, newspapers, magazines and novels was included in the questionnaire. By means of principal component analyses, three components were identified that were interpreted to reflect European/American cultural influence, Modern African cultural influence and Popular African cultural influence.

A linear regression model comprising socio-demographic variables, drug use in the social environment, a sensation seeking personality trait measure and the three cultural orientation indices was subject to analyses. Gender, drug use among significant others and European/Western cultural orientation were found to be positively associated with drug use in general. Socio-economic status was positively associated with use of alcohol and tobacco. Modern African cultural orientation was negatively associated with smoking and use of inhalants, whereas Popular African cultural orientation was negatively associated with use of alcohol, cannabis and inhalants.

The study has provided baseline data for a sub-population of adolescents in Senegal. This may form the first step in establishing a monitoring system for development of drug use in the country. The results may in themselves also represent an information base upon which to develop preventive measures among school students. Although the results from this study is not to be regarded as representative for the adolescent population in Senegal in general, it may be assumed that the particular group under study represent trend setters in a wide sense, and also when it comes to experimenting with drugs. Targeting this group for prevention efforts may therefore have effects also among a wider population. It is nevertheless recommended also to conduct similar studies among other groups, like school drop outs, and to study the effects of particular preventive measures in this context before implementing them on a large scale.

2. INTRODUCTION

Since 1981 FORUT, Campaign for Development and Solidarity, has been engaged in development co-operation in Sri Lanka, India, The Maldives, Senegal, The Gambia, Sierra Leone and Nepal. The Norwegian peace and temperance organisations IOGT, Juvente and IOGT Junior are behind FORUT. In the majority of FORUT's projects the issue of alcohol and drugs is an integrated part. Local Action is a project instituted by FORUT, aiming at collecting information about use of alcohol and drugs in the participating countries and to test alternative ways of preventing substance use. The establishment of a media centre in Dakar is one example of trying out such alternative strategies.

In 1998, Local Action in Senegal initiated a study among secondary school students in the country. SINTEF Unimed in Oslo was engaged to assist in the various stages of the study. Although large scale school-based studies have been conducted in other African countries previously, the current study is, to the knowledge of the authors, the only one so far that can claim to be representative for a nation wide population. The immediate objectives of the study was: a) to establish baseline data on the prevalence and frequency of drug use among the students in Secondary School (Upper Level), and b) to analyse the relationship between drug use and demographic, psychological, social and cultural predictors. In a longer term perspective, the study clearly also aimed at contributing to the development of viable preventive strategies against adolescent drug use in Senegal.

The report starts with some general information about drug use in Africa and in Senegal, continues with a presentation of Senegal as the venue of the study, including some facts about the school system in the country. Thereafter, methodology is presented and methodological concerns and limitations discussed. Results are presented in Chapter 5, and the last two chapters are devoted to discussion of the results, suggestions for further studies and some comments on the application of the results.

2.1. Drug use in Sub-Saharan Africa

Psychoactive substances like alcohol, tobacco, cannabis and a wide variety of naturally grown hallucinogens have been used by the people of Africa throughout history (Partanen, 1991; DuToit, 1980).

In Senegal, use of cannabis was earlier concentrated in the region of Niaye (between Dakar and Saint-Lous). Recent years have seen an upsurge of cannabis cultivation in the region of Casamance in the south of the country, and in particular on the Karones islands. This development is linked to the rebellion army in that has been active in that area since 1980.

Alcohol in various forms stands out as the most common and thus most important substance among these. Ethnographic and anthropological studies undertaken from around 1940 (Everett, Waddell & Heath, 1976; Netting, 1979) have described great variations in habits and significance of the traditional use of alcohol and other substances. Although not without exceptions, this use has largely been described as socially unproblematic and culturally integrated (see e.g. Colson & Scudder, 1988). Problems related to alcohol in particular may be said to have developed as a result of the breakdown of traditional society[2], in early phases also directly linked to colonialism (see Pan, 1975). There are, however, different opinion about this, and the appearance of the movement "Tuub naan" (literally: "I refuse to drink") under the leadership of Nasr Al Diin in 1673 – 77 in the north of what is Senegal today, may serve to indicate that problems were found also before colonialism[3].

In the 20th century, wars, de-colonisation, modernisation, external cultural influence, urbanisation, and inclusion in the global economy, are among the main reasons for the increased pace of social and cultural changes. In the views of many observers (see e.g. Maula et. al., 1988; Partanen, 1991), this has created a breeding ground for a rapid increase in the use of alcohol and other intoxicating substances. Globalisation of drug use is now on the agenda of United Nations and other international

1. ---

[2] When using the concept "traditional" in this report, this is not understood as a static condition. Rather, the authors share the understanding that society has been and is under continuos change. When using concepts like "traditional", the main reason is a methodological need for demarcation between what is local and what is imported, primarily from the western world.

[3] By "colonialism" we understand here the period when western countries actually conquered countries in order to gain complete control over the territory.

organisations. In such a situation, it may also be expected that young people are particularly vulnerable (Friedman, 1985). The importance of the younger generation is underlined by the fact that almost half the population in Sub-Saharan Africa is comprised of children below 15 years of age (Rimmer, 1991).

Although international organisations, Governments, journalists and others sometimes seem to compete in their gloomy description of the extent of alcohol use and its social consequences in Africa, there is very little individual level data with sufficient quality on the extent and nature of use, and even less regarding development over time. During the last 20 years or so, a number of small scale epidemiological studies among adolescents (secondary school students) have been undertaken (for an overview, see Eide, 1997). Most of these studies do, however, suffer from serious methodological problems, and the quality of the reports have often been low. Very few can claim some form of representativity of a population. There is, in other words, a very weak knowledge basis. Although World Health Organisation and United Nations Drug Control Programme collects information through a reporting system that involves authorities in each country (World Drug Report, 1997), baseline data and established systems necessary for monitoring the development are virtually non-existent. Any attempt at developing strategies and practical actions for prevention of drug use in Africa must therefore be based on a rather uncertain fundament. This, of course, increases the risk of setting wrong targets, giving descriptions of the situation that differ from the reality experienced by the people, and implementing irrelevant, or even worse, counterproductive measures. There are thus ample reasons to embark on the task of establishing data sets that may contribute to a viable monitoring system.

2.2. The situation in Senegal

In December 1997, the Interministerial Committee in the fight against drugs (Comitè Interministèriel de Lutte contre la Drogue, CILD), in collaboration with United Nations Drug Control Programme (UNDCP), arranged a seminar in Dakar, aiming at a national consensus on a plan of action against drugs (CILD, 1997). There is no information about the extent or nature of drug use in Senegal in the seminar report. Among the priorities are, however, establishment of a National Documentation Centre and the carrying out of epidemiological studies in the population at regular intervals.

Based on the Consensus Conference in 1997, a National Plan of Action Against Drug Abuse and Illicit Trafficking was adopted by the Ministry of Internal Affairs in January 1998 (Ministere de l'Interieur, 1998). Two sections of the plan offer information about the drug scene in the country. Cannabis is cultivated in certain geographical areas, largely in the south. Senegal is reportedly a transit country for illegal drugs (heroin and cocaine) from Asia and Latin America destined for European or North American markets. This is a relatively new situation. Trafficking within the region follows largely the roads between Banjul (Gambia) and Dakar, by train between Dakar and Bamako (Mali), and by boat (Cap Verde).
The following table printed in the Plan of Action provides information about seizures by the customs and the police in 1995 and 1996. Showing the importance of cannabis in the country, this information also indicates that drugs like cocaine and heroin may be on the local market.

Table A. Seizures by the customs and the police registered in Senegal in 1995 and 1996 (kilogrammes).

	Customs		Police	
	1995	1996	1995	1996
Cannabis	1952,3	998	79976[1]	212,60
Cocaine	5,781	4,125	2,159	1,904
Heroin	0.460	7,550	15,088	250,18

[1] Number of seeds

In addition to the figures presented in the table, the National Guard (la Gendarmerie Nationale) reported the seizure of 113 000 kg fresh cannabis plants, 2817 kg processed cannabis and 420,5 kg cannabis seeds during a large scale campaign in 1995 to eradicate cannabis cultivation. A total of 221 fields were reportedly destroyed during the campaign.

Studies on drug use in Senegal have largely focused marginal groups like prisoners and psychiatric patients. On the prevalence of drug use in the country, the description in the National Plan of Action is very brief, only referring to a National study carried out among 7677 adolescents between 15 and 24 years old by UNESCO in 1988 (UNESCO/ED/SCM/QAI/ DR/88). Results from this study (referred to in Ndiappe et al, 1992) showed that 39 % of the youth within this age span reported to have taken at least one legal drug (i.e. largely tobacco and alcohol), and 14 % reported

to have experience with at least one illegal drug (understood largely as cannabis and inhalants, although the latter is not illegal in the common sense of the word). Higher levels of use among school drop-outs than among those who attended school were also reported. Furthermore, poly drug use was reported as quite common. In a later report, Ndiappe et al. (1992) conducted further analyses on the same 1988 data set. In this second report, prevalences (ever used) of the various licit and illicit drugs are reported by geographical zones, and a distinction is made between zones in Dakar and zones outside Dakar. Lowest and highest figures were: Tobacco: 10 % – 50 % (Dakar: 17 % – 25 %), alcohol: 7 % – 37 % (Dakar: 10 % – 17 %), cannabis: 5 % – 23 % (Dakar: 7 % - 17 %), inhalants: 5 % - 17 %, datura (local, naturally grown hallucinogen): 7 % - 20 % (Dakar: 3 % - 15 %). Figures for "hard drugs" (heroine, cocaine) were reported to be between 0 and 5 %.

Among the interesting results in this study is a negative relationship between the use of locally produced drugs (cannabis, datura, solvents and pills) and social status. Alcohol use was reported to vary in the sense that certain regions (particularly Ziguinchor, due to palm wine production) tended to be "wetter" than others. Cannabis is particularly prevalent in the producing areas of Niayes and Karon Island..

In another publication from the above study, Seck et. al. (1994) reported that the youth appear to be well aware of the dangers related to drug use and that the large majority agreed that it was necessary to fight this problem.

Among the few other studies that have been published, one is from a cross-national study among small samples of psychiatric patients (Facy & Fallaca (1993) wherein the respondents in Senegal reported experience with alcohol, cannabis, solvents, heroin, cocaine, benziodiazepines and hallucinogens.

3. Scene of the study

3.1 Senegal

Senegal is situated in the western part of Sahel, engulfing Gamiba, bordered in the South by Guinea Bissau and Guinea Conakry, in the East by Mali and, in the North by Mauretania and in the west by the Atlantic Ocean.

The population of Senegal was estimated to be around 8.8 million in 1997. With 57.7 % living in the rural areas and 42.3 % in urban areas, Senegal is among the most urbanised countries in Sub-Saharan Africa. The urban/rural population ratio is expected to be around 50/50 in the year 2000. 58 % of the population is below the age of 20. The vast majority are muslim (94 %). Per capita Gross National Product was USD 559 in 1994, leaving the country among the poorer in the world (number 160 out of 175 on UNDP's ranking) (Ministère de l'•conomie, de Finance et du Plan, 1993).

3.2. The school system

The educational system in Senegal emanates directly from the French system. Primary school is free and compulsory in Senegal and should in principle cover 100 % of the population between 6 and 13 years of age. This has, however, never been achieved, and currently there is not capacity to enroll more than 60 – 70 % of the children in this age category. Of the total youth population in the 5 to 19 year age range, 52 % is within the school system.

The exam (Entrée en 6eme) at the end of Primary school decides who is eligible for the Secondary School lower level. In 1996/97, the total population of children between 13 and 16 years of age counted 722 705 (source: Ministere de l'Education Nationale). Of these, 151 735, i.e. 21.0 %, attended secondary school (lower level). The proportion for girls was 15.5 % and for boys 26.9 %. The remaining students are theoretically destined for vocational training, but this part of

the school system has never functioned. Private secondary schools may be an alternative for those who are not selected for the Public Secondary School.

After four years at Secondary School, another exam (BFEM – Brevet de Fin d'Études Moyen) distinguishes between those eligible for the Secondary School Upper Level. In 1996/97, 9.6 % of the total population between 17 – 19 years of age (i.e. 59 511 out of 618 955) attended Secondary School upper level (source: Ministere de l'Education Nationale). The proportion of girls in the upper level was 6.4 % and for boys 13.4 %. The final exam at this level is the Bacalaureat. Intake to the university is based on the results from the three years at Upper Secondary School and the capacity at the two universities (Cheik Anta Diop in Dakar since 1957 and Gaston Berger in Saint-Louis since 1989/90).

A private school system has developed alongside the public system. To some extent this may be ascribed the crisis in the public school system and it's incapacity to cater for the whole youth population. The private schools further represents an alternativ to the public system, in that many of them are based on different confessions (often catholic). Parents pay relatively high fees for their children to attend the private schools, who offers better conditions for teachers and students as compared with the public system. The distinction between private and public schools thus also contain socio-economic differences.

The following may serve as a typology of the different types of schools currently existing in the Senegalese secondary school system:

- Private – public
- Lay – confessional
- General – vocational
- Boys – mixed – girls

All secondary schools are in urban areas, and the majority are in Dakar and in Saint-Louis (current and former capital).

4. Methodology

4.1. The questionnaire

Based on experience from previous studies in Africa (see e.g. Acuda & Eide, 1997; Acuda & Eide, 1996), it was decided to use a questionnaire developed by Smart et. al. (1980) for World Health Organisation. This questionnaire had been developed in order to provide a simple instrument that could be applied across nations and cultures. Validity and reliability was tested in various countries (Nigeria included) during it's development and also in connection with the studies undertaken by the first author in Zimbabwe in 1990 and 1994. An advantage with this questionnaire is also that it exists in the major languages, making in many countries translation unnecessary. In Senegal, French is used as the language of teaching, and students in the age range in question here (approximately 16 – 20 years of age) are fluent in French and face no problems in comprehending the questionnaire.

A first step in the adaptation of the questionnaire was a one-day workshop with the Advisory Group. Regarding the core questions on use of the most common drugs, these have not been altered from their original formulation, including also questions about frequency of use. For other drugs, anticipated to be rare in this population, only simple questions about experience (yes/no) or knowledge is generally asked. For the purpose of analysing the relationship between cultural consumption and drug use, a cultural orientation scale developed in connection with the study in Zimbabwe in 1994 (Eide & Acuda, 1996) was further developed and adapted to the Senegalese context. A few other variables were also added to the questionnaire, including a short Sensation Seeking scale (see 5.4) and questions on use of drugs by significant others (see 5.3). In total, the questionnaire comprised 117 variables, all with closed answer categories.

Adaptation of the questionnaire and further development of the cultural orientation scales were undertaken through a two - week long exercise that included visits to eight different secondary schools in Dakar and in the cities of Thiès, Louga and St.-Louis. During these visits, there were brief meetings and discussion with the headmasters or other representatives from the school administration. Most important, however, were discussions with students in the classrooms. This was arranged in order to ensure the relevance of the topic and the questions and to conduct a mapping of the students' cultural consumption, understood here as what they read, listen to on the radio or watch on television or other channels of communication. An important aspect of these discussions was also to learn about the drug related terminology among adolescents to include this in the questions on drug use, and to obtain a general impression of the drug scene in this population.

The following schools were visited:

In Dakar: le Collegè Sacre Cæur, les Cours privé Machallalh, le lycée Blaise Diagne, et le lycée J. F. Kennedy.

Outside Dakar: le lycée Malick SY de Thies, le lycée Malick Salle de Louga, le lycée Ameth Fall, and le lycée El hadji Oumar Tall de Saint-Louis.

Following these visits, the questionnaire was further revised and extended. Thereafter, the Advisory Group had a one-day meeting discussing through the questionnaire and all the changes that had been made following the school visits.

In the final stages of the development process, comments on the questionnaire were also given by professors Bouba Ly and Momar Guèye at University Cheik Anta Diop (Dakar).

A pre-test was conducted among 292 students at one school in Dakar and one in Joal, leading to some changes of formulations in the questionnaire. A test-retest was also conducted among 89 students.

4.2. Sampling[4]

For practical reasons, school-based studies in Africa will have to sample at the level of schools and classes.

The sampling plan is stratified, with stratification made according to two zones: The area of Dakar and the remainder of Senegal. The sample is selected with two levels:

- The first level comprises the schools (primary units)
- The second level comprises the classes (secondary units).

It was decided to sample 30 schools. This reduces somewhat the problem related to sampling schools and classes rather than individuals, and the number is large enough to ensure representation across all geographical areas and the different school types. In order to obtain a good representation, schools were distributed proportionally to the weight of the zones in term of number of schools within each zone.

A. Sampling of schools

Schools were the primary units of the sample. Small schools with less that three classes at each level were excluded from the sampling. A systematic drawing was carried out within each of the two zones (Dakar and the remainder) with probabilities proportional to the size of the school, and the size being here the number of classes per school. This method of drawing reduces the relative error by increasing the precision of the estimates insofar as the sizes of the schools are very variable. The selection of schools was done independently in each zone. Thus, the selection is different from one zone to another. The drawing's step is obtained by dividing, for each zone, the number of classes by the number of schools to be drawn for the investigation (cfr. Table 2). A random number ranging between 1 and the drawing's step was drawn to which one added in a repetitive way the drawing's step. For each drawn number, one compares it with the cumulated number of pupils; the first school whose size is equal or higher than this numbers is drawn. The probability of drawing a

1.

[4] The sampling was designed and carried out by Mr. Bakary Djiba, statistician at Ministry of Finance, Dakar.

school is calculated independently inside each zone (zone of Dakar and the remainder).

It is calculated in the following way:

$$P(1hi) = \frac{N(h) * N(hi)}{\Sigma N(hi)}$$

- P(1hi) is the probability of selecting with the first degree school i of the zone h;
- N(h) the number of schools to be drawn in the zone h (Dakar or the remainder of Senegal);
- N(hi) the number of classes of school i of the zone h;
- ΣN(hi) the sum of the numbers of classes of the schools of the zone h

Table B. Drawing's step according to zone

Zone	Number of schools	rate	Drawn schools	Number of classes	Drawing step
Dakar	40	0,46511628	14	693	50
Remainder	46	0,53488372	16	774	48
Total	86	1	30	1 467	

Using this method, 14 schools in Dakar and 16 in the other regions were sampled.

B. Sampling of classes

Selection of classes was done after numbering all classes at each of the drawn school. A systematic drawing was conducted of 3 classes in each school. That means that all the minor units at the same school have the same probability to be in the sample. This probability is equal to the rate of final survey T:

$T = M*No/N$

M = is the number of drawn schools

No = the constant number of classes drawn off in each school of the sample

N = the total number of classes in Senegal

Before sampling at this stage, the classes were numbered from 1 to n at each school. To determine the step of survey, one divided, for each school, the number of classes identified by the number of classes to draw, 3 in the case of this investigation. A random number is chosen, ranging between 1 and the total number of classes in each particular school. This number corresponded to the number of the first class that was sampled. To determine the other classes, the number of the first class in was added in a repetitive a repetitive way : 1, 2, 3 times the step of survey.

*For example, if in any school there were a step of survey of k, and if the chosen number ranging between 1 and k is 5. Thus, the class whose number is 5 will be our first class, the second class will have the number 5+k, the third class like number 5+2*k.*

4.3. Data collection

Well in advance of the data collection, the teachers responsible for the survey at each of the selected schools were gathered for a two-day seminar in Dakar. The purpose of this meeting was to provide the same instructions to everyone involved on all procedures relating to the data collection, including procedures for instructing the children, answering questions, collecting and handling the completed questionnaires, ensuring anonymity and other important aspects that are described thoroughly in the survey manual (Smart et al., 1980). It was also regarded as important to provide the teachers with a common understanding of the purpose of the study and to give them an opportunity to raise all possible questions to the Study Co-ordinator.

Two weeks ahead of the data collection, the questionnaires were sent in sealed envelopes to the schools and kept by the responsible teachers. Data collection took place in the classrooms in the morning on the same day at all schools (12th March). Care was taken to avoid interference from school administration during this exercise, in order to ensure a climate in which the students could feel free to answer honestly. Immediately after they were completed, the questionnaires were put in envelopes and mailed to the office of the co-ordinator at FORUT Senegal in Dakar. No problems during data collection in the classes were reported.

4.4. Treatment of data and data analyses

Two assistants at FORUT entered the data, applying EpiInfo (Version 6)**.** When entry was finalised, the file was exported to SPSS for further data analyses. SPSS 8.0 for Windows and SPSS 9.0 for Windows were applied in the analyses. Various univariate, bivariate and multivariate statistics were applied. Principal component analyses was applied in order to explore the appropriateness of combining items on cultural consumption into cultural orientation indices. As the drug variables in general were skewed, logistic regression was considered most appropriate in the analyses of their relationships with the psychological, social, demographic and cultural predictors included in the questionnaire.

During development of the core questionnaire (Smart et.al., 1980), various tests of reliability and validity were conducted in samples drawn from populations around the world, including also one African country (Nigeria). For the purpose of testing the questionnaire that was applied in Senegal, a pre-test was conducted among 150 students at two schools in Dakar before the data collection, leading to minor changes in some of the formulations. A re-test was also conducted among a net sample of 89 students three weeks after the main data collection, yielding very high correlations (intra class correlation, all in the .90 – 1.00 range) between the two measurements and thus indicating high reliability.

Validity tests were not included in the questionnaire. There are, however, good reasons to anticipate that the results from the study are valid. Firstly, previous testing (see Smart et. al., 1980) supported the validity of the questionnaire. Secondly, thorough discussions with students in the target group during adaptation and development of the questionnaire ensured the relevance of the questions and a common understanding of the formulations among students and researchers. Thirdly, local expertise was heavily involved in the development process, ensuring *face validity* of the questionnaire. Furthermore, the fact that the results to a large extent

concur with previous studies and what may be expected in the current population, brings support to the quality of the study. Lastly, the concurrence between theoretically based hypotheses (relating praticularly to the cultural orientation and the sensation seeking scales) and the results indicates *construct validity* (Kerlinger, 1992).

Whenever an underlying hypotheses of a linear relationship is relevant, a chi-square test for linear trend has been applied (with the resulting statistics always having one degree of freedom). In other cases, Pearsons chi-square test for association has been utilised.

Several indices have been constructed and are included in the analyses that are presented below (indices for urbanicity, socioeconomic status, significant other's drug use, sensation seeking personality trait, cultural orientation). These have all been constructed by simply adding together the values on the relevant variables. Construction of indices enhances possibilities for utilisation of the data material (Kerlinger, 1992); Firstly, such constructions imply a reduction or a simplification of an extensive data material, thus facilitating between-group comparisons. Secondly, random variations in single variables will not influence the result in the same way as when using single item indicators. Thirdly, indices will comprise variables that, when combined, provide a more reliable measure of the theoretical constructs underlying the study and the research questions. Lastly, construction of indices may yield increased validity in that several aspects of a construct are involved.

In the multivariate analyses, the model comprise a number of predictors with different scales. This is of importance when interpreting results, as the effect of predictors with different scales may not be directly compared to each other. A scale with a large number of values (i.e. the cultural orientation scales) will obtain lower odds ratios than a predictor with a low number of values (the extreme being a variable with two values like the gender variable). When considering the relative relationship between predictors of different scales, this must be taken into consideration.

Missing values did not appear to be a major problem in this data set. When combining several variables into one index, the number of missing will, however, increase. In the indices that are applied below, missing values have been replaced by the mean value of the index in question in order to avoid reduction in the number of respondents included in the multivariate analyses.

5. RESULTS

5.1. The sample

By following the procedure for sampling described in Chapter 4.2, a net sample of 2952 students were obtained, representing approximately 5 % of the population of students in Upper Level Secondary School in Senegal. All regions and all school types were represented in the sample.

5.2. Bivariate analyses

5.2.1. Demographic and socio-economic variables

A number of demographic and socio-economic variables were included in the questionnaire, useful for describing the net sample as well as in analysing variation in drug use and in order to interpret results.

Table 1. Gender and age distribution in the net sample.

	Girls		Boys	
Age categories	n	% of n	n	% of n
< = 16:	70	5.8 %	55	3.2 %
17:	151	12.5 %	141	8.1 %
18:	226	18.7 %	326	18.8 %
19:	312	25.8 %	474	27.3 %
19+:	448	37.1 %	741	42.7 %
Total	1207		1737	

Age by gender: $\chi^2 = 31.46$, df = 4, p = .000

By coding less than 16 years as 15 and 19+ as twenty, mean age for male students was 19.0 years and for female students 18.8 years. As shown in Table 1,

there is a gender difference in age distribution with girls tending to be younger than boys.

In order to further study and to control the age distribution in the sample, mean age for the three levels (premiere, seconde and terminal) were compared. Mean age was shown to increase according to expectations, i.e. 18.2 years at the first level (seconde), 19.0 years at the second level (premiere) and 19.7 years at the last level (terminal) (Wilcoxon Signed Rank Test: Z = - 47.60, p = .000). Although mean age for girls were lower at all three levels, the pattern (increasing age with increasing levels) was the same for the two genders.

The urban – rural dimension was measured by means of three different variables, shown in Table 2 with a breakdown by gender.

Table 2. Urbanicity by gender

	Girls		Boys		Gender difference		
	n	% of n	n	% of n	Chi square	d.f.	p
Where were you born?	1203		1725		90.55	1	.000
In a village		18.7		34.8			
In a city		81.3		65.2			
Where did you attend primary school?	1202		1725		76.63	1	.000
In a village		19.2		34.0			
In a city		80.8		66.0			
Where did you attend lower level secondary school?	1189		1719		50.55	1	.000
In a small city		28.4		41.3			
In a big city		71.6		58.7			

Clear gender differences in urbanicity appear from Table 2; Female students in Upper Level Secondary School have a more pronounced urban background than their male counterparts. This may of course reflect a more restrictive attitude towards

education for girls in rural areas. It may, however, also be the result of socio-economic differences along the rural – urban dimension and that people in rural areas have less opportunity to pay for the education of their children. In turn, this may lead to parents giving priority to the boys when forced to choose among their children.

The three variables shown in Table 2 were combined in a sumscore to form an index of urbanicity (values: 0 (14.6 %), 1 (12.4 %), 2 (23.1 %), 3 (49.9 %)).

Socio-economic status indicators comprised parents' level of education and possession of certain durables at home. Mothers of the students at Upper Level Secondary School have in general a lower level of education than the fathers (Fathers: No education (26.9 %), Adult literacy (7.8 %), Primary school (10.7 %), Secondary school (14.7 %), Higher education (39.9 %). Mothers: No education (40.8 %), Adult literacy (6.7 %), Primary school (18.8 %), Secondary school (19.6 %), Higher education (14.1 %).). The difference between mothers and fathers is statistically significant (Wilcoxon Signed Rank Test: $Z = -22.05$, $p = .000$).

Table 3. Parents' level of education by gender

	Girls		Boys		Gender difference		
	n	% of n	n	% of n	Chi square	d.f.	p
Father's level of education	1034		1519		125.73	4	.000
No education		17.4		33.4			
Adult literacy		7.6		7.9			
Primary school		7.8		12.7			
Secondary school		16.5		13.4			
Higher education		50.6		32.7			
Mother's level of education	1147		1608		119.73	4	.000
No education		29.6		48.8			
Adult literacy		6.7		6.7			
Primary school		20.1		17.9			
Secondary school		24.7		15.9			
Higher education		18.8		10.7			

Table 3 shows that parents' level of education is significantly associated with gender differences, in that the parents of female students are reported to have a higher level of education than the parents of male students. Parents with lower levels of education are thus less inclined to have their daughters attending the Upper Level Secondary Schools as compared to parents with higher levels of education.

An indicator of socio-economic status was constructed by adding the values on the two variables in Table 3. Values on this index (referred to as Socioec1 in the text below) ranged from 2 to 10 (re-coded to 0 – 8 for the analyses), mean value was 5.93, standard deviation[5] 2.89 and skewness[6] - .07. Index values for girls was higher than

1. _____

[5] Standard deviation is a measure of spread or dispersion in a sample. Provided that we have a normally distributed variable: When the standard deviation is given to be 2.89, this implies that (approximately)

for boys (mean value girls: 6.75, boys: 5.36) (Gender difference: Mann-Whitney Test: Z = - 11.70, p = .000).

A different way of constructing an indicator of socio-economic status is to ask if the respondents are in possession of durables that are expensive and may be expected to be unevenly socially distributed in the particular context of the study. A TV set, refrigerator, gas cooker, telephone, stereo and **……..** were the items chosen for this particular study. An index was constructed by applying the number of durables as values in the variable. Range for the index (referred to in the text as Socioec2) was from 6 – 12 (recoded to 0 – 6 for the analyses), mean value was 9.40, standard deviation 1.84 and skewness - .29. Analysing gender difference again yielded higher index values for girls than for boys (mean value girls: 9.90, boys: 9.06. Mann-Whitney Test: Z = - 11.48, p = .000), confirming the higher socio-economic status of the families with girls attending Upper Level Secondary Schools in Senegal.

The relationships between the socio-demographic and socio-economic variables applied in the analyses to follow are shown in Table 4.

Table 4. The relationship between socio-demographic and socio-economic variables (Kendalls tau_b correlations). Pairwise deletion of missing values. N varies from 2875 to 2952.

	Gender	Age	Urbanicity	Socioec1
Gender(girls = 1)				
Age	.08**			
Urbanicity	- .18**	- .14**		
Socioec1	- .19**	- .19**	.35**	
Socioec2	- .19**	- .16**	.35**	.36**

1. ———————————————————————————————

68 % of the values on the variable will be within a range that is ± 2.89 from the mean value. Approximately 96 % of the values will be within a range that is ± 2 standard deviations from the mean.

[6] Skewness is a measure that tells us to what extent a distribution deviates from normal distribution.

Firstly, the correlation matrix confirms that girls are more urbanised and live under better socio-economic conditions than boys. Secondly, the age variable is negatively correlated with urbanicity as well as the two socio-economic indicators, at least partly explained by gender age differences. Looking at these correlations by gender reveals that all associations go in the same direction for boys and girls, but there are certain differences in strength. Three of the correlations shown in Table 4 are stronger for girls than for boys; Urban by age (.19 vs. .09), age by Socioec2 (.24 vs. .08), and age by Socioec1 (.22 vs. .14).

5.2.2. Drug experience by gender

As gender differences in drug use may be expected in general and particularly in the context of a developing country, exploring these differences is often a necessary first step in the strategy for analysing a data material.

Table 5. Proportion of students by gender having any experience with smoking, alcohol, cannabis or inhalants

	Boys		Girls		Gender difference		
	n	% of n	n	% of n	Chi square	d.f.	p
Smoking	1726	58.1	1196	20.9	400.44	1	.000
Alcohol	1728	25.9	1197	18.1	24.95	1	.000
Cannabis	1729	12.0	1198	0.8	131.15	1	.000
Inhalants	1734	9.7	1198	3.2	48.62	1	.000

Gender difference is significant for all four drug types. The proportion of boys who have ever tried cannabis is (approximately)15 times as high as the proportion for girls, while the corresponding ratios for the other drugs are 3 (inhalants), 2 (tobacco) and 1.5 (alcohol). Table 5 also shows that the rank order between the different drugs is the same for boys and for girls. Smoking is most prevalent, followed in order by alcohol, cannabis and inhalants.

One may discuss what is the right measure to apply in order to establish a picture of the drug scene in a population. Life time use is obviously a relatively crude measure that will also include use that is not really relevant for the current situation, e.g. one time encounter with smoking many years ago. Due to the relatively low

prevalence of high frequent use revealed in this study, it was, however, decided to apply the “ever used” measure. The next table shows the results of asking question about experience *during the last 12 months*.

Table 6. Proportion of students by gender having experience with smoking, alcohol, cannabis or inhalants during the last 12 months.

	Boys		Girls		Gender difference		
	n	% of n	n	% of n	Chi square	d.f.	p
Smoking	1724	35.7	1199	9.8	251.15	1	.000
Alcohol	1714	14.6	1200	9.9	13.91	1	.000
Cannabis	1728	6.8	1197	0.5	19.00	1	.000
Inhalants	1726	2.3	1196	2.3	0.00	1	.997

It is shown here that the figures for use during last 12 months are clearly lower than for the life time use question. Otherwise, the pattern is the same as in Table 5, the only exception being that there is no gender difference when it comes to reported use of inhalants during the last 12 months.

Table 7. Proportion of students by gender having experience with smoking, alcohol, cannabis or inhalants during the last 30 days.

	No		Yes, on 1-5 days		Yes, on 6-19 days		Yes, on 20+ days	
	(n)	% of N	(n)	% of N	(n)	% of N	(n)	% of N
Tobacco								
Boys (N = 1718)	1234	71.8	284	16.5	53	3.1	147	8.6
Girls (N = 1191)	1123	94.3	35	2.9	15	1.3	18	1.5
Alcohol								
Boys (N = 1717)	1593	92.8	43	2.5	25	1.5	56	3.3
Girls (N = 1200)	1154	96.2	18	1.5	11	0.9	17	1.4
Cannabis								
Boys (N = 1726)	1657	96.0	37	2.1	12	0.7	20	1.2
Girls (N = 1199)	1196	99.7	1	0.1	---	----	2	0.2
Inhalants								
Boys (N = 1727)	1704	98.7	5	0.3	4	0.2	14	0.8
Girls (N = 1195)	1179	98.7	6	0.5	3	0.3	7	0.6

It is apparent from Table 7 that use within the last 30 days is low for all drug types and that gender differences are marked for 3 of the four drugs. Smoking among boys is the drug behaviour that comes out with somewhat higher figures. As many as 28.2 % report that they have smoked the last 30 days. Proportion of daily smokers (20+) is 8.6 %. For alcohol (7.2 % having used last 30 days), and to some extent also with respect to cannabis (4.0 % having used last 30 days), there is clearly a group of boys that report use that must be characterised as something more than mere experimentation.

5.2.3. Drug experience by age

It was expected that the proportion of students with some experience with drugs would increase with increasing age. The results from analysing drug experience by age are shown in the following two tables, one showing the figures for boys and the second showing the figures for girls.

Table 8. Proportion of male students having ever smoked by age

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1730	58.1		4.55	.033
Age:					
< = 16	55	63.6	1.00		
17	140	57.9	.78		
18	323	52.0	.62		
19	474	53.8	.67		
19+	738	63.1	.98		

Table 9. Proportion of female students having ever smoked by age

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1202	20.9		22.20	.000
Age:					
< = 16	70	37.1	1.00		
17	151	31.1	.76		
18	225	20.4	.43		
19	311	18.3	.38		
19+	445	16.9	.34		

These tables reveal a negative trend for smoking with increasing age, but also that this trend is more pronounced for girls than for boys. This result counters what may be expected in an adolescent population.

Table 10. Proportion of male students having ever taken alcohol by age

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1724	25.7		.04	.84
Age:					
< = 16	55	23.6	1.00		
17	139	27.3	1.22		
18	324	29.3	1.34		
19	470	21.9	.91		
19+	736	26.9	1.19		

Table 11. Proportion of female students having taken alcohol the last 12 months by age

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1199	18.0		7.34	.007
Age:					
< = 16	70	27.1	1.00		
17	151	19.9	.67		
18	224	17.0	.55		
19	311	23.2	.81		
19+	446	13.0	.40		

There is no association (linear trend) between use of alcohol and age among boys, whereas there is a negative trend for girls.

Table 12. Proportion of male students having ever taken cannabis by age

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1729	12.0		14.93	.000
Age:					
< = 16	55	3.6	1.00		
17	140	7.1	2.04		
18	324	9.3	2.70		
19	472	11.9	3.57		
19+	737	14.9	4.65		

It appears from this table that cannabis use is increasing with age for boys. A corresponding analyses was conducted also for females, but the self-reported use of cannabis among females is too low (0.5 %) to reveal any meaningful pattern.

Table 13. Proportion of male students having taken inhalants the last 12 months by age

	n	% of n	Odds ratio	Chi square for for linear trend	p value
All	1734	9.7		.35	.551
Age:					
< = 16	55	16.4	1.00		
17	141	7.8	1.60		
18	325	8.9	.93		
19	472	7.8	.37		
19+	740	11.2	.56		

Table 14. Proportion of female students having ever taken inhalants by age

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1200	3.2		5.71	.017
Age:					
< = 16	70	4.3	1.00		
17	150	6.7	1.60		
18	224	4.0	.93		
19	309	1.6	.37		
19+	447	2.5	.56		

No systematic association between age and life time experience with inhalants is indicated for boys. For girls, however, there appears to be a tendency towards reduced experience with increasing age.

5.2.4. Drug experience by urbanicity

Urbanicity is a variable that very often has been shown to be associated with drug use. It is in many ways expected that the urban environment is more conducive to adolescent drug use. The results from analysing drug experience by urbanicity are shown in the following two tables, one showing the figures for boys and the second showing the figures for girls. The urbanicity measure is explained above (Chapter 5.2.1.).

Table 15. Proportion of male students having ever smoked by urbanicity.

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1738	58.1		33.62	.000
Urbanicity:					
0	323	46.4	1.00		
1	241	54.8	1.32		
2	401	56.9	1.52		
3	723	65.9	2.17		

Table 16. Proportion of female students having ever smoked by urbanicity.

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1207	20.9		16.58	.000
Urbanicity:					
0	94	11.7	1.00		
1	115	11.3	.96		
2	262	18.7	1.74		
3	725	24.5	2.45		

Experience with tobacco is increasing with inceased level of urbanicity for both boys and girls.

Table 17. Proportion of male students having ever taken alcohol by urbanicity.

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1738	25.9		.84	.362
Urbanicity:					
0	319	23.8	1.00		
1	240	29.2	1.32		
2	401	21.4	.87		
3	723	27.8	1.23		

Table 18. Proportion of female students having ever taken alcohol by urbanicity.

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1202	18.1		3.85	.050
Urbanicity:					
0	96	24.0	1.00		
1	115	22.6	.93		
2	262	17.2	.66		
3	703	16.9	.65		

The results show that experience with alcohol is not associated significantly with urbanicity among boys, whereas there is a weak negative trend among girls.

Table 19. Proportion of male students having ever taken cannabis by urbanicity.

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1729	12.0		14.07	.000
Urbanicity:					
0	324	8.6	1.00		
1	241	8.7	1.01		
2	399	9.8	1.15		
3	724	15.9	2.00		

Cannabis experience among boys in the sample increases with increasing level of urbanicity. A corresponding analyses for girls is not presented as prevalence was too low for any meaningful comparison between levels of urbanisation.

Table 20. Proportion of male students having ever sniffed (taken inhalants) by urbanicity.

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1734	9.7		11.13	.000
Urbanicity:					
0	323	6.8	1.00		
1	242	7.0	1.03		
2	401	8.5	1.27		
3	725	12.7	1.99		

Table 21. Proportion of female students having ever sniffed (taken inhalants) by urbanicity.

	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1200	3.1		2.53	.112
Urbanicity:					
0	96	1.0	1.00		
1	113	1.8	1.73		
2	262	3.4	3.42		
3	703	3.7	3.69		

It appears from these two tables that experience with inhalants increases with increasing urbanicity for boys. For girls, prevalence is low and the increase is not strong enough to be statistically significant.

5.2.5. Drug use by socio-economic stratification

A number of studies in the industrialised countries have shown socio-economic status to be associated with health behaviours (Klerman, 1993). This has also been the case for studies of drug use in Africa (Acuda et. al., 1996).

Table 22. Tobacco use (ever used) by socio-economic indicators

	Male students					Female students				
	n	% of n	Odds ratio	Chi square for linear trend	p value	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1731	58.1				1202	20.9			
Socioec 1:				32.35	.000				27.80	.000
0	409	50.6	1.00			135	11.1	1.00		
1	84	50.0	.98			33	21.2	2.15		
2	175	54.9	1.19			90	12.2	1.11		
3	102	52.0	1.06			65	15.4	1.45		
Mean	164	58.0	1.34			190	19.5	1.93		
4	139	60.4	1.49			87	14.9	1.41		
5	104	61.5	1.56			96	16.7	1.60		
6	141	62.4	1.62			145	24.1	2.55		
7	154	68.8	2.15			178	28.1	3.13		
8	140	72.1	2.53			183	33.1	3.62		
Socioec 2:				49.06	.000				20.62	.000
0	206	44.7	1.00			33	9.1	1.00		
1	216	51.4	1.31			86	10.5	1.17		
2	220	50.9	1.29			120	16.7	2.00		
3	284	57.7	1.69			196	16.8	2.02		
Mean	51	54.9	1.51			44	20.5	2.57		
4	317	60.6	1.90			258	19.4	2.40		
5	252	67.1	2.52			222	27.9	3.88		
6	185	74.1	3.54			243	26.7	3.65		

Experience with smoking increases with increasing level of socio-economic status for both genders.

Table 23. Alcohol use (ever used) by socio-economic indicators

	Male students					Female students				
	n	% of n	Odds ratio	Chi square for linear trend	p value	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1725	25.9				1202	18.1			
Socioec 1:				16.20	.000				12.20	.000
0	408	20.8	1.00			136	8.1	1.00		
1	81	14.8	.66			32	6.3	.76		
2	174	25.3	1.29			90	14.4	1.92		
3	102	25.5	1.30			65	9.2	1.16		
Mean	281	30.2	1.65			190	21.6	1.13		
4	138	19.6	.92			88	20.5	2.92		
5	105	31.4	1.74			95	27.4	4.28		
6	141	26.2	1.35			146	19.9	2.82		
7	156	27.6	1.45			177	17.5	2.41		
8	139	39.6	2.49			183	21.9	3.18		
Socioec 2:				11.67	.000				.02	.903
0	204	26.0	1.00			33	24.2	1.00		
1	213	25.8	.99			85	18.8	.72		
2	220	19.5	.69			122	21.3	.85		
3	282	18.4	.64			196	15.8	.59		
Mean	53	30.2	1.23			44	13.6	.49		
4	317	23.7	.88			258	16.3	.61		
5	253	34.0	1.47			223	17.0	.64		

6	183	36.6	1.65		241	20.7	.82

Experience with alcohol among boys increases with increasing levels of socio-economic status. This is also the case for one of the indicators among girls (i.e. level of parents' education), whereas one indicator (possession of durables) is not associated with alcohol use.

Table 24. Cannabis use (ever used) by socio-economic indicators

	Male students				
	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1729	12.0			
Socioec 1:				10.92	.001
0	409	11.0	1.00		
1	83	7.2	.63		
2	175	8.6	.76		
3	101	8.9	.79		
Mean	283	11.3	1.03		
4	139	10.8	.98		
5	105	14.3	1.35		
6	140	11.4	1.04		
7	155	16.8	1.63		
8	139	20.9	2.13		
Socioec 2:				21.24	.000
0	206	8.7	1.00		
1	216	7.4	.84		
2	219	10.0	1.17		
3	284	9.9	1.14		
Mean	53	13.2	1.59		
4	315	11.4	1.35		
5	253	17.4	2.20		
6	183	20.2	2.65		

Experience with cannabis increases with increasing level of socio-economic status for boys. Prevalence among girls is again too low for any meaningful analysis to be conducted.

Table 25. Sniffing (use of inhalants) (ever used) by socio-economic indicators

	Male students					Female students				
	n	% of n	Odds ratio	Chi square for linear trend	p value	n	% of n	Odds ratio	Chi square for linear trend	p value
All	1734	9.7				1200	3.2			
Socioec 1:				4.85	.028				3.66	.056
0	411	7.3	1.00			134	2.2	1.00		
1	84	11.9	1.72			33	3.0	1.36		
2	175	8.6	1.19			90	1.1	.48		
3	102	8.8	1.23			65	3.1	1.39		
Mean	281	8.5	1.19			190	2.1	.94		
4	139	12.9	1.89			88	1.1	.50		
5	105	15.2	2.28			95	5.3	2.43		
6	140	7.1	.98			146	4.1	1.87		
7	157	11.5	1.64			177	2.8	1.77		
8	140	13.6	1.99			182	5.5	2.54		
Socioec 2:				20.91	.000				2.85	.092
0	208	4.8	1.00			33	3.0	1.00		
1	216	7.9	1.69			85	2.4	.77		
2	217	6.5	1.37			121	3.3	1.09		
3	284	7.4	1.58			195	1.5	.50		
Mean	54	9.3	2.02			43	2.3	.76		
4	317	12.6	2.86			260	1.5	.50		
5	253	14.6	3.39			221	5.4	1.84		
6	185	13.5	3.09			242	4.5	1.52		

Experience with inhalants among boys increases with increasing socio-economic status for boys. There is also a corresponding trend for girls, but this pattern is weaker and not statistically significant.

5.2.6. Alcohol type experience

Table 26. Current experience ("Currently, how often do you drink …..") with different alcohol types by gender

	(n)	% of N	Gender difference: Chi square	d.f.	p
Clear beer:			31.63	1	.000
Boys (N = 1711)	352	20.6			
Girls (N = 1188)	149	12.5			
Palm wine or domestic beer:			3.41	1	.065
Boys (N = 1711)	137	11.5			
Girls (N = 1195)	236	13.8			
Imported wine:			1.47	1	.225
Boys (N = 1710)	178	10.4			
Girls (N = 1194)	108	9.0			
Imported spirits:			20.82	1	.000
Boys (N = 1711)	208	12.2			
Girls (N = 1189)	83	7.0			
Domestic spirits:			22.51	1	.000
Boys (N = 1711)	147	8.6			
Girls (N = 1189)	49	4.9			

Boys are clearly more likely to drink clear beer, imported and domestic spirits than girls. For palm wine and domestic beer, girls report slightly more experience than boys. With regards to imported wines, the gender difference appears to be small and statistically insignificant. Clear beer is the most popular alcohol type among boys. Among girls, the top two types are palm wine/domestic beer and clear beer.

Correlations between the alcohol type variables (five categories: never, occasionally, every month, every week, every day) ranged from .50 to .69 (Kendalls tau_b). Further analyses showed that there is a tendency towards less use of clear beer and domestic beer with increased levels of urbanicity, but no association between urbanicity and the other two alcohol types.

Table 27. Current use ("Currently, how often do you drink ….") of different alcohol types by socio-economic indicators

	Socioec1[1] Mean	Kruskal-Wallis Test Chi-square	d.f.	p	Socioec 2[1] Mean	Kruskal-Wallis Test Chi-square	d.f.	p
Clear beer:		5.65	1	.017		.50	1	.482
No current use	5.88				9.43			
Current use	6.20				9.33			
Palm wine or domestic beer:		1.41	1	.235		12.53	1	.000
No current use	5.92				9.46			
Current use	6.09				9.09			
Imported wine:		38.36	1	.000		31.72	1	.000
No current use	5.84				9.35			
Current use	6.88				9.96			
Imported spirits:		26.97	1	.000		15.66	1	.000
No current use	5.85				9.36			
Current use	6.72				9.79			
Domestic spirits:		0.00	1	.967		13.80	1	.000
No current use	5.94				9.44			
Current use	5.93				8.92			

[1] Socioec1: Range 2 – 10. Socioec2: Range = 6 – 12.

With respect to imported wine and spirits, it appears from Table 27 that current use is more prevalent with higher levels on socio-economic status. For clear beer, there is a corresponding positive association between current use and the first indicator of socio-economic status. For palm wine and domestic spirits (sum-sum, kana), there is a negative association between current use and the second indicator of socio-economic status.

Table 28a. Alcohol type experience (current use) by urbanicity. Chi square test.

	Clear beer					Domestic beer/palm wine				
	n	% of n	Odds ratio	Chi square for linear trend	p value	n	% of n	Odds ratio	Chi square for linear trend	p value
All	2835	17.2		5.61	.020	2842	12.7		16.40	.000
Urbanicity:										
0	413	19.6	1.00			414	15.2	1.00		
1	354	22.9	1.22			354	19.8	1.37		
2	655	14.7	.70			658	12.3	.78		
3	1413	16.3	.80			1416	10.4	.65		

Table 28b. Alcohol type experience (current use) by urbanicity. Chi square test.

	Imported spirits					Domestic spirits				
	n	% of n	Odds ratio	Chi square for linear trend	p value	n	% of n	Odds ratio	Chi square for linear trend	p value
All	2837	10.0		2.32	.125	2840	6.7		8.87	.003
Urbanicity:										
0	415	7.5	1.00			415	8.2	1.00		
1	353	13.0	1.86			354	11.9	1.51		
2	655	7.5	1.00			656	4.9	.57		
3	1414	11.2	1.56			1415	5.8	.69		

Table 28c. Alcohol type experience (current use) by urbanicity. Chi square test.

		Imported wine			
	n	% of n	Odds ratio	Chi square for linear trend	p value
All	2839	9.8		11.07	.000
Urbanicity:					
0	414	6.0	1.00		
1	352	11.4	1.99		
2	657	6.5	1.09		
3	1416	12.1	2.14		

The results shown in Tables 28a – c firstly confirm what was revealed in Tables 17 and 18, i.e. a tendency towards reduced experience with alcohol with increasing levels of urbanicity (a negative relationship shown among girls and a non-significant relationship among boys). Negative trends between experience and urbanicity is revealed for clear beer and domestic alcohol, and a postive trend is demonstrated for imported wine.

5.2.7. Experience with being intoxicated

Table 29. Have you ever been drunk by gender

			Gender difference		
	(n)	% of N	Chi square	d.f.	p
Have ever been drunk:			22.51	1	.000
Boys (N = 1711)	147	8.6			
Girls (N = 1194)	49	4.1			

It is shown here that the proportion of boys that report experience with being intoxicated is more than double the corresponding proportion for girls. Of those who reported having ever been intoxicated, 4.5 % of the boys and 2.3 % of the girls had been drunk “once”. Corresponding figures for “2-3 times” were 3.1 % and 0.5 %, for “4-10 times” 1.7 % and 0.2 %, and for “10+ times” 2.5 % and 0.3 % respectively. Further analyses revealed that there was a weak but nevertheless significant association between experience with being drunk and one of the socio-economic inidicators (SOCIOEC2) (Chi square test for linear trend: $\chi = 4.05$, $p = .044$). Experience with being drunk also increased somewhat with age (Chi square test for linear trend: $\chi = 4.50$, $p = .034$) and with level of urbanicity (Chi square test for linear trend: $\chi = 5.62$, $p = .018$).

5.3. Drug use among significant others

Drug use by significant others, for example parents, siblings and friends, may be useful as indicators of the drug environment school children find themselves in. In countries were surveys among adults are difficult to conduct, information on parents’ use given by their children may be

one way around this problem. Information on drug use among friends may function as a control of self-reported use.

Table 30. Tobacco use among significant others

	(n)	% of N	
Father takes tobacco (N = 2852):		445	15.6
Mother takes tobacco (N = 2834):	31	1.1	
Sister takes tobacco (N = 2812):	46	1.6	
Brother takes tobacco (N = 2869):	948	33.0	
How many of your friends take tobacco? (N = 2934)			
No one	649	22.1	
A few	1143	39.0	
Many	694	23.7	
All of them	65	2.2	
I don't know	380	13.0	
How many of your fellow class mates take tobacco? (N = 2934)			
No one	158	5.4	
A few	1484	50.6	
Many	696	23.7	
All of them	12	0.4	
I don't know	584	19.9	

It appears from this table that tobacco use among family members is low, particularly among mothers and sisters. Fifteen per cent of the fathers and 33 % of brothers reportedly take tobacco. The figures for friends and classmates do, however, indicate that the students find themselves in an environment where smoking takes place.

Table 31. Alcohol use among significant others

	(n)	% of N
Father takes alcohol (N = 2883)	303	10.5
Mother takes alcohol (N = 2878)	171	5.9
Brother takes alcohol (N = 2886)	328	11.4
Sister takes alcohol (N = 2868)	123	4.3
How many friends take alcohol (N = 2380)		
No one	1441	60.5
A few	704	29.6
Many	212	8.9
All of them	23	1.0
How many of your class mates take alcohol (N = 1338)		
No one	647	48.4
A few	625	46.7
Many	61	4.6
All of them	5	0.4

The proportion of parents that take alcohol is as low as 10.5 % (fathers) and 5.9 % (mothers). Among friends and class mates, the proportion of alcohol users is clearly higher than among family members. For these two questions, respondents were also allowed to answer "I don't know", and this has reduced the number giving information about friends' and classmates' alcohol use considerably. Bearing in mind this problem, the main conclusion to be drawn from these results is that there is alcohol use among significant others but that the proportion of users is clearly less than is the case for smoking.

Table 32. Cannabis use among significant others

	(n)	% of N
How many friends take cannabis (N = 2907)		
No one	2373	81.6
A few	433	14.9
Many	87	3.0
All of them	14	0.5
How many of your class mates take cannabis (N = 2810)		
No one	2464	87.7
A few	326	11.6
Many	17	0.6
All of them	3	0.1

It appears from Table 32 that use of cannabis is not very common in the social environment of the respondents.

Index of drug use among significant others

An index of drug use among significant others was constructed by adding the variables on use among friends. The “don’t know” category was coded as missing for this construction and missing values on the index replaced with the index mean value before the multivariate analyses. Values on the index ranged from 3 to 12, mean value was 4.84, standard deviation 1.35 and skewness .045. Increasing values on the index implies increasing number of friends that have experience with either alcohol, tobacco or cannabis.

5.4. Sensation seeking scale

Personality factors and their relation to behaviour have been points of long-standing focus for psychological research. Sensation-seeking, as measured by the widely used Zuckerman scales and their derivatives (Zuckerman, 1979), is one of the most well-known personality traits identified

as being associated with dimensions of health behaviours. The trait is defined as a need for novel sensations and experiences and a willingness to undergo risks to obtain such experiences. A large number of studies have shown an overall relationship between sensation-seeking and drug use (Pedersen, 1989). The cross-cultural validity of the construct is supported by corresponding results from many countries (Kraft & Riise, 1994). Most of the studies have, however been conducted in industrialised countries. Among very few exceptions to this, Eide et. al. (1997) reported similar results from their study among adolescents in Zimbabwe. Several versions of scales to measure the sensation seeking trait exists, ranging from complex scales with a high number of items intended to tap sub-dimensions of the trait, to short versions drawn from the original scales to meet time and space constraints when including this measure in multiple purpose studies. In this study, a slightly adapted short scale developed by Madsen et. al. (1987) was chosen.

The sensation seeking scale was constructed by adding the nine items in Section 5 of the questionnaire (see Appendix 1). Range for the scale was 9 to 18, mean value 13.22, standard deviation 1.27 and skewness .117.

5.5. Cultural orientation

The underlying theoretical rationale for the cultural orientation construct applied here implies the presence of two cultural flows within any cultural setting, i.e. one stemming from external influence and one from the indigenous culture. Individuals find themselves in a cross-pressure between these two flows, resulting in a variety of possible strategies that may be reflected in behavioural choices. A number of items on cultural consumption (media and music preferences) were included in the questionnaire, intended to comprise behaviours that could reflect such individual strategies. (For further reading about the construct, and references to relevant anthropological and sociological literature, see Eide, 1997).

Principal component analyses was applied to identify items that share variance in order to construct indices that are reflecting underlying theoretical constructs (see e.g. Dunteman, 1989). Initial scree analyses including all items in sections 4.1. – 4.5. of the questionnaire revealed a three component solution to fit the data best. During the exploratory phase, a number of items were excluded from further analyses due to multiple or low loading.

Table 33. Principal component loading of cultural orientation variables, oblique rotation, N = 2558.

Scale items	European/American orientation	Modern African orientation	Popular African orientation
How often do you:			
1.Watch tv music channels	**.80**	.09	.03
2.News on foreign tv stations	**.71**	.08	- .14
3.American films on video	**.71**	- .07	.12
4.American tv series	**.61**	- .19	.29
5.Listen to Radio Nostalgie	**.51**	.15	.04
6.Watch American films at cinema	**.50**	.23	- .05
7.Listen to Africa no. 1	.05	**.68**	- .14
8.Listen to RFI	- .07	**.63**	- .12
9.Read French newspapers	.27	**.56**	.08
10.Listen to other African radio stations	- .29	**.54**	.10
11.Read foreign non-French newspapers	.16	**.52**	- .14
12.Watch African films at cinema	.14	**.47**	.12
13.Listen to RTL on radio	- .27	.39	.39
14.Watch other foreign tv series	- .02	- .11	**.71**
15.Watch French tv series	.08	- .03	**.65**
16.Watch African films on tv	.06	- .16	**.64**
17.Listen to mbalax	- .12	- .07	**.63**
18.Listen to music from the islands	.05	.12	**.55**
19.Read African magazines	.17	.25	**.52**

Based on the result of the principal component analyses, items no. 1 – 6 were added together to form an index interpreted to reflect a cultural orientation that is positive towards European or American influence. Items no. 7 – 12 were added together to form an index reflecting Modern

African cultural orientation. The third index comprised items no. 14 – 19, representing a Popular African cultural orientation. Correlations between the three indices varied from .11 to .20.

Interpretation of the to African cultural orientation items into a "Modern" and a "Popular" component is based on knowledge about what type of messages the various channels (radio, film, written material, etc.) represent and what different groups of people may prefer to listen to, watch or read. The "Modern" component was assumed to represent the choices of people with high levels of education and urbanicity, whereas the "Popular" component could be regarded as representing the choices of the working class or, rather, the majority of people with lower socioeconomic status.

The properties of the three indices were as follows: European/American: Range 6 – 30, mean value 17.70, standard deviation 5.33 and skewness .047. Modern African: Range 7 – 35, mean value 13.68, standard deviation 4.31 and skewness .93. Popular African: Range 5 – 25, mean value 18.98, standard deviation 3.63 and skewness - .56.

The three cultural orientation indices were analysed with respect to urbanicity. European/American cultural orientation was found to increase with increased level of urbanicity ($F = 118.45$, d.f. = 3, $p = .000$), Modern African cultural orientation was associated with reduced level of urbanicity ($F = 36.82$, d.f. = 3, $p = .000$), whereas no association was found between urbanicity and Popular African cultural orientation. Further, European/American cultural orientation was found to increase with increasing levels on the two socio-economic indicators (Socioec1: $F = 46.18$, d.f. = 9, $p = .000$. Socioec2: $F = 114.85$, d.f. = 9, $p = .000$). Modern African cultural orientation was found to be reduced with increased levels on the socioeconomic indicators (Socioec1: $F = 9.09$, d.f. = 9, $p = .000$. Socioec2: $F = 8.21$, d.f. = 9, $p = .000$). Popular African cultural orientation was found to increase with increasing socioeconomic status among the younger age groups, followed by a small reduction among the older age groups. (Socioec1: $F = 4.67$, d.f. = 9, $p = .000$. Socioec2: $F = 4.13$, d.f. = 9, $p = .000$). It was also found that mean value on the three indices differed between boys and girls in the following way: European/American cultural orientation: Mean boys = 17.24, mean girls = 17.24 ($F = 31.55$, df = 1/2943, $p = .000$). Modern African cultural orientation: Mean boys = 14.34, mean girls = 12.74 ($F = 101.11$, df = 1/2943, $p = .000$). Popular African cultural orientation: Mean boys = 17.94, mean girls = 20.49 ($F = 421.89$, df = 1/2943, $p = .000$).

5.6. Multivariate analyses

A number of the variables that have been presented above were applied as predictors for drug use in a series of multivariate analyses. Due to the character of the drug variables and the relatively low level of frequent drug use, a dichotomous ever used variable (1 = no experience with the particular drug, 2 = have tried the particular drug at least once) was applied as measurement of drug

use. Logistic regression is suitable when the dependent variable is dichotomous. In the tables that follow, results from both univariate and multivariate analyses are presented.

Table 34. Multiple logistic regression of gender, age, urbanicity, socioeconomic status, sensation seeking personality trait and cultural orientation on tobacco use (ever used). N = 2863.

	Bivariate analyses:		Multiple analysis:	
Predictors	Odds ratio	95 % CI	Odds ratio	95 % CI
Gender (1 = girl)	5.25	4.43 – 6.21	6.29	5.10 – 7.76
Age (15 – 20)	1.03	.96 – 1.09	1.07	.99 – 1.15
Urbanicity (0 – 3)	1.10	1.02 – 1.17	1.06	.97 – 1.17
Socioec1 (2 – 10)	1.04	1.01 – 1.07	1.04	1.00 – 1.08
Socioec2 (6 – 12)	1.07	1.03 – 1.12	1.06	1.00 – 1.13
Significant others' drug use (3 – 12)	1.66	1.56 – 1.77	1.49	1.39 – 1.60
Sensation seeking (9 – 18)	1.23	1.16 – 1.30	1.12	1.05 – 1.20
American/European orientation (6 – 30)	1.05	1.03 – 1.06	1.05	1.03 – 1.07
African Modern orientation (7 – 35)	.99	.97 – 1.00	.95	.93 - .97
African Popular orientation (5 – 25)	.92	.90 - .94	.99	.96 – 1.01

Significant others' drug use, Sensation seeking, American/ European orientation are all positively associated with self-reported experience with tobacco, in that increasing values on these variables give increasing odds for having ever smoked tobacco. Age, Urbanicity and the two socioeconomic indicators are all near significantly and positively associated with the dependent variable. The significant OR for gender reflects that odds for boys having any experience with smoking is much higher than the corresponding odds for girls. African Modern orientation is negatively associated with smoking. In the bivariate analysis, African Popular orientation is associated with reduced odds for having any experience with inhalants, but this association is not significant when controlling for the other variables in the regression model.

Table 35. Multiple logistic regression of gender, age, urbanicity, socioeconomic status, sensation seeking personality trait and cultural orientation on alcohol use (ever used). N = 2845.

	Bivariate analyses:		Multiple analysis:	
Predictors	Odds ratio	95 % CI	Odds ratio	95 % CI
Gender (1 = girl)	1.59	1.32 – 1.91	1.11	.89 – 1.40
Age (15 – 20)	.95	.88 – 1.02	.95	.88 – 1.04
Urbanicity (0 – 3)	.96	.88 – 1.03	.81	.73 – .90
Socioec1 (2 – 10)	1.07	1.04 – 1.11	1.11	1.06 – 1.16
Socioec2 (6 – 12)	1.04	.99 – 1.09	.98	.91 – 1.04
Significant others' drug use (3 – 12)	1.90	1.77 – 2.04	1.88	1.74 – 2.02
Sensation seeking (9 – 18)	*1.07*	*1.00 – 1.15*	*.99*	*.92 – 1.07*
American/European orientation (6 – 30)	1.03	1.01 – 1.04	1.01	.99 – 1.03
African Modern orientation (7 – 35)	1.00	.97 – 1.01	1.00	.97 - 1.02
African Popular orientation (6 – 30)	.96	.94 - .98	.98	.95 – 1.01

Increased levels of Significant others' drug use and Parents level of education (Socioec1) are associated with increased odds for having experience with alcohol. Increased levels of Urbanicity and (near significant) Popular African orientation are associated with reduced odds for having experience with alcohol.

Table 36. Multiple logistic regression of gender, age, urbanicity, socioeconomic status, sensation seeking personality trait and cultural orientation on cannabis use (ever used). N = 2859.

	Bivariate analyses:		Multiple analysis:	
Predictors	Odds ratio	95 % CI	Odds ratio	95 % CI
Gender (1 = girl)	18.04	9.22 –35.30	10.11	4.98 –20.56
Age (15 – 20)	1.39	1.21 – 1.59	1.43	1.22 – 1.68
Urbanicity (0 – 3)	1.12	.98 – 1.28	1.01	.84 – 1.21
Socioec1 (2 – 10)	1.02	.97 – 1.07	1.01	.94 – 1.08
Socioec2 (6 – 12)	1.09	1.01 – 1.18	1.04	.93 – 1.16
Significant others' drug use (3 – 12)	2.24	2.04 – 2.48	1.95	1.76 – 2.17
Sensation seeking (9 – 18)	***1.32***	***1.18 – 1.47***	***1.16***	***1.02 – 1.31***
American/European orientation (6 – 30)	1.07	1.04 – 1.10	1.05	1.02 – 1.09
African Modern orientation (7 – 35)	.99	.96 – 1.03	.98	.94 - 1.02
African Popular orientation (6 – 30)	.86	.83 - .90	.91	.87 – .95

Gender, age, Significant others' drug use, Sensation seeking and American/ European orientation are associated with increased odds for having experience with use of cannabis. African popular orientation is associated with reduced odds for such experience. In the bivariate analysis, the second socioeconomic indicator (Socioec2) is associated with increased odds for having any experience with use of cannabis, but this association is not significant in the multivariate analysis.

Table 37. Multiple logistic regression of gender, age, urbanicity, socioeconomic status, sensation seeking personality trait and cultural orientation on use of inhalants (ever used). N = 2863.

	Bivariate analyses:		Multiple analysis:	
Predictors	Odds ratio	95 % CI	Odds ratio	95 % CI
Gender (1 = girl)	3.30	2.30 – 4.73	2.52	1.68 – 3.79
Age (15 – 20)	1.00	.89 – 1.13	1.00	.88 – 1.14
Urbanicity (0 – 3)	1.19	1.03 – 1.37	1.07	.90 – 1.28
Socioec1 (2 – 10)	1.03	.98 – 1.09	.98	.92 – 1.05
Socioec2 (6 – 12)	1.14	1.05 – 1.24	1.08	.97 – 1.20
Significant others' drug use (3 – 12)	1.69	1.55 – 1.85	1.54	1.40 – 1.69
Sensation seeking (9 – 18)	1.19	1.06 – 1.33	1.08	.96 – 1.21
American/European orientation (6 – 30)	1.06	1.03 – 1.08	1.03	1.00 – 1.07
African Modern orientation (7 – 35)	.98	.95 – 1.02	.98	.94 - 1.02
African Popular orientation (6 – 30)	.92	.89 - .95	.97	.93 – 1.01

Gender and Significant others' drug use are positively associated with increased odds for having any experience with inhalants. In the bivariate analysis, American/ European orientation is associated with increased odds for sniffing inhalant and vice versa for African Popular orientation, but both these associations turn non significant in the multivariate analysis.

6. Discussion

6.1. Methodological issues

This study has aimed at being representative for the segment of adolescents in Senegal that attend the Upper Level Secondary School, implying that the results from the study represent estimates of the situation in this sub-population as a whole. Although the results may provide some indications on the situation among adolescents in general, they may, however, not be applied as estimates for adolescents that do not attend the Upper Level Secondary School. The population that is sampled represents in many ways the elite among adolescents in Senegal. Further studies will have to be undertaken among the non-school going population as well as among students at Lower Level Secondary School in order to get the full picture of the adolescent drug scene in the country. Having taken these reservations into consideration, it is nevertheless the case that previous studies have indicated that it is the elite that also sets the trend for various types of drug use behaviour, and particularly so when it comes to alcohol (Eide, 1997) and tobacco (Marcus, 1992). In countries like Senegal, where use of drugs among adolescents is still at a relatively low level, it may be expected that the anticipated increase in drug use first will be manifest among the elite and later trickle down to the other segments of the population. Although various types of drugs probably spread differently in a society, and traditional drug use influences the picture, this will most certainly be the case for alcohol and tobacco. At the same time, alcohol and tobacco are among the most prevalent substances and currently on the increase outside the industrialised countries (World Drug report, 1997).

As schools and classes had to be chosen as the units in the two-stage sampling strategy, the estimates are less precise than if a random sampling strategy could have been chosen. Choosing a relatively high number of schools (30 out of 86) and drawing the sample with probabilities proportional to school size, reduces the problem somewhat. There is nevertheless reason to be somewhat cautious in the interpretation of the results in that there is a danger for finding false positive associations. One way of countering this problem is to be conservative in the interpretation of results, particularly when interpreting on basis of probability levels on .05 (or larger).

6.2. Results

It is a particular characteristic of the sample that mean age is relatively high for both boys and girls. This may be of some importance for the interpretation of the results, as it could be expected that most of the students have passed the age of initial experimentation with drugs. If this is the case, the study may have captured most of the drug use that takes place among adolescents in

the particular sub-population in question. Although not presented above, questions were asked about debut age for some of the drugs, revealing mean age for tobacco, alcohol and inhalants to be 13.9 years, 14.3 years and 14.8 years respectively (genders combined). There is thus no indication that adolescents in Senegal experiment with drugs later than young people elsewhere.

A skewed gender distribution is another particular characteristic of the sample, indicating inequality of opportunities between boys and girls in the Senegalese education system. Higher levels of urbanicity among the girls reflect that gender differences are less pronounced in urban environments than in rural settings. Also with respect to socio-economic status there is a positive association with female school attendance at the upper level in secondary school. It is also indicated from the results that parents with higher education are more inclined to let their daughters attend Upper Secondary School, reflecting not only that there may be economic differences associated with level of education, but also cultural differences (traditional – modern) between different segments of Senegalese society.

In general, the level of drug use among Upper Level Secondary School students in Senegal must be regarded as being at a relatively low level, particularly if compared to corresponding European studies. Compared with other similar studies in Sub-Saharan Africa, the figures also tend to be somewhat lower, bearing in mind the relatively high mean age of the population studied. The low prevalence of alcohol use is obviously the most particular characteristic of the results, reflecting the relative modest role of alcohol in contemporary Senegalese society. Experimenting with and use of cannabis and inhalants also appear to be at a relatively low level. Prevalence of smoking is, on the other hand, quite high also in comparison with other studies in Africa. It may be that the high level of experimentation with smoking results from characteristics of the sampled population, i.e. high level of urbanicity as well as socio-economic status. It may further be that the common pattern that is often found for alcohol and tobacco with respect to such variables (socioeconomic status and urbanicity) is absent for the part of due to the suppression of this substance in Senegalese society. Smoking is, on the other hand, not subject to corresponding social sanctions. The results have also shown that although the respondents are exposed to drug use (alcohol, tobacco, cannabis) through their family and friends, the level of exposure cannot be regarded as being very high. Although the level of smoking among adolescents in general is at a low level in Africa, reports that only 15.6 % of the fathers of the school students “takes tobacco” must be regarded as very low. Considering at the same time the low level of alcohol use among fathers (10.5 % “takes alcohol”) might in fact put the level of drug experimenting among adolescents in a somewhat different light. To the extent that drug use in Senegalese society has been at a low level among the parent generation, higher levels of use among today’s school children may be regarded as an indication of an ongoing increase. When

considering whether drug use in a society is “high” or “low”, the frame of reference is always critical.

Gender differences in drug use is among the most pronounced results from the study, corresponding to findings in a number of studies on adolescent drug use on the African continent (see e.g. Eide, 1997). In general, boys experiment with and use drugs to a much larger extent than is the case for girls. Regarding smoking, which is the most prevalent drug in this population, the results show that very few girls report levels of use that may be interpreted as “daily” smoking. Regarding alcohol use, it appears that in addition to differences in levels of use, there are also differences in choices of alcohol types. Girls report experience with domestic alcohol and with imported wine at the same level as boys, whereas the other alcohol types are more popular among boys. As domestic alcohol and imported wine have different sociocultural connotations, the non-significant gender differences may reflect different mechanisms for use. A closer study revealed that use of imported wine was the only among the different alcohol types that was not associated with having ever been intoxicated. Use of clear beer was strongly associated with such experience. This indicates different ways of drinking associated with different alcohol types and is also a clear indication of gender differences.

It could be assumed in a population like the present that drug use increases with increasing age. As shown above, cannabis use increases with age among boys, whereas there is a general negative association between drug use and age among girls. It is suggested that the most likely explanation to this phenomena is that there is a bias in the sample due to a selection among students as they move from one level to the next. Similar findings (and interpretations) have been reported from the studies in Zimbabwe (Eide, 1997). In the current population, the selection may be particularly strong among girls, due to the gender differences touched upon above. On the background of such an interpretation, it is also interesting that the situation is reverse for cannabis, i.e. for boys only as reported use of cannabis is too small among girls to enable this analyses. This indicates that the use of cannabis may be a trend among the male (elite) adolescents in Senegal. It may, however, also reflect that the use of cannabis in Senegal is not linked to strong cultural traditions that would be present in particular in rural areas where modernisation and external cultural influence must be expected to have had least impact (Cfr. Du Toit, 1980 for reading about the history of cannabis in Africa).

With the exception of alcohol, drug use appears to be increasing with increasing levels of urbanicity. Such an increase could be expected as urbanicity is also associated with less traditional attitudes and reduced social control. Again it is, however, interesting to note that it is only smoking that increases with increased level of urbanicity among girls. The results with regards to alcohol may be attributed to the particular situation in Senegal where alcohol consumption is not socially

accepted and thus at a very low level on one hand, whereas there is a traditional alcohol use on the other. Although the traditional alcohol use in many ways has been repressed for a long time, following the islamisation of Senegalese society, domestic production and consumption is still going on in rural areas.

Socio-economic status is another common predictor of variation in behaviour. As expected, drug use in general appears to increase with increasing socio-economic status. Again, the results show gender differences in that the social stratification is more pronounced for boys than for girls. In fact, most of the associations are not significant in the girl sub-sample. As was the case also for urbanicity, smoking is the drug that most clearly increases with level of socio-economic status also across genders.

Looking at the associations between socio-economic status and alcohol types (Table 26) provides us with indications of social distribution of alcohol type preferences. Domestic alcohol types tend to become less popular with increasing levels of socio-economic status, and vice versa for the other (imported) types. With regards to urbanicity, experience with domestic products and clear beer is less prevalent with increasing levels of urbanicity. Imported wine is positively associated with urbanicity, whereas the trend for imported spirits is not strong enough to yield a significant chi square statistics. The results here thus indicate that alcohol type is an important component in the urban – rural distinction in alcohol consumption. Differences in alcohol type preferences may indicate interesting behavioural and even cultural differences (see e.g. Eide, Acuda & Røysamb, 1998). One must not forget, however, that the cost of the alcohol types differ and that this contributes to explain the variation in habits.

In the multivariate analyses the results show the effect of each predictor when controlling for the other predictors in the model. These analyses have demonstrated Gender and Drug use by significant others to be strong predictors in this population. Differences between boys and girls are again shown to be among the most important characteristics of the adolescent drug use scene in Senegal.

It is demonstrated that socio-economic status is associated with smoking tobacco and drinking alcohol. For alcohol, however, such an association is found for parents level of education only and not with the economic measure. It is suggested that this difference between the two indicators of social status indicates a qualitative difference between the two measures. Although both representing indicators of a general social status concept, level of education may to a higher

degree also reflect cultural differences along a traditional – modern continuum. That no associations were found between social status and taking cannabis or inhalants in the multivariate analyses may indicate that diffusion processes vary between drug types.

The differences in the role of urbanicity that was found between smoking tobacco and drinking alcohol may, as suggested above, indicate that the suppression of alcohol use in Senegalese society is so effective that it actually overcomes an expected positive association between alcohol use and urbanicity. This may add to the above by further indicating that these two drugs will spread differently in this particular context, as the urban setting will be more conducive to increases in smoking than increases in alcohol use.

The Sensation Seeking personality trait was found to be associated with use of two of the four drugs, i.e. only partly as expected, as a large number of studies have shown this measure to predict drug use in industrialised countries. There are also examples of studies that have shown this measure to work as a predictor of drug use among adolescents in developing countries (Eide et al., 1997). One could further believe that in a context where alcohol use is associated with social sanctions, Sensation Seeking could be a particularly relevant predictor for drinking. Obviously, this is not the case here. This may be due to the particular role of alcohol in this "dry culture", implying also different processes leading to its use. As this scale was drawn directly from a previous study in Zimbabwe, and originally stemming from a study in Europe, it may of course also be that developing mot context relevant items could have influenced results.

Underlying the construction and inclusion of the cultural orientation measures was that such variables had earlier been shown to be associated with drug use (Eide, 1997). Although the theoretical basis for the construction is not related to a particular context, the construction of such variables is to a very large extent so. That European/American orientation was positively associated with urbanicity and socio-economic status, was as anticipated. "Westernisation" or other related processes have long been considered to represent an influence towards increased use of alcohol and tobacco in particular. The negative association between Modern African orientation and both Urbanicity and Socio-economic status is interesting in that these findings add to the interpretation of this particular cultural dimension. Modernisation is a global process that takes place within any local culture or context. From the results here one may suggest that the external cultural influence suppresses the locally anchored modernisation among the urbanised upper social strata, whereas this influence is reduced with reduction in socio-economic status and level of urbanisation. Modern African cultural orientation may be considered in some way as representing a local counterforce

against external cultural influence. To the extent that drug use is related to culture change and the local – global cultural dimension, it could thus be expected that the association between Modern African orientation differs from the corresponding association with European/American cultural orientation. Popular African orientation is apparently not associated with urbanicity or socio-economic status in any systematic way, indicating that such a cultural orientation is present in Senegalese society in general.

Much effort was put in ensuring the relevance of the items through many discussions with students belonging to the population that was later sampled. Interpreting the distinction between a "modern" and a "popular" local orientation was done on the basis of a thorough knowledge of contemporary Senegalese society, but may evidently be the subject of further discussion. The result support the view that a refinement of the distinction between external and internal cultural influence may be in place and could be done when the scale involved is sophisticated enough. It is also apparent that the two local orientation measures are somewhat differently associated with drug use. Taken together, they tend towards being negatively associated with three of the drugs included in the analyses. Modern Local orientation is negatively associated with smoking, whereas Popular Local orientation is negatively associated with use of cannabis and (although not significantly) alcohol.

7. Conclusion

The study among secondary school students in Senegal has provided a picture use and experimenting of tobacco, alcohol, cannabis and inhalants among Upper Level Secondary school students in Senegal. Through this representative study, it has been shown that the level of experimenting with alcohol, cannabis and inhalants is at a relatively low level when compared to studies in other African countries. Although regular smoking is still rather rare in this population, experimenting with smoking is considered to be relatively high. The study has shown urbanicity and social status to be crucial variables in describing the diversified distribution of drug use in a modern, complex society. Both variables are in general associated with increased experimenting with drugs. Due to the suppression of alcohol in this largely muslim country, the level of alcohol use is apparently very low. This is also reflected in the results from the study and may in fact be among the reasons for the generally low level of drug use among Upper Secondary School students.

According to International reports (see e.g. World Drug Report), drug use is on the increase in particular in developing countries. This may also be the case for Senegal, although the cross-sectional character of the current data material cannot indicate trends. The study has established a baseline data set on adolescent drug use in Senegal that may be useful for monitoring the development in the future. Analyses did, however, show that explanations for drug use not only varies between types of drugs, but also that they are found in a combination of socio-demographic, social, individual and cultural variables. This should evidently be taken into consideration in the development of any measures aiming at countering a negative development. A particular challenge is formed by the influence on drug use by the cultural globalisation, possibly best countered by utilising the positive influence exerted by the local cultural fundament.

The importance of following up this study with repeated representative surveys in order to monitor the situation and to enable research on causes for changes in adolescent drug use is underlined. Having established the baseline data from this study provides a unique possibility for following the development in the years to come. It is, however, also necessary to conduct other studies that may go deeper into the mechanisms underlying use or non-use in this particular context. And, not least, the current study may have given some directions for school-based drug use prevention. In order to ensure the efficiency of such efforts, it is, however, also necessary to conduct smaller intervention studies that may provide direction for the practical prevention.

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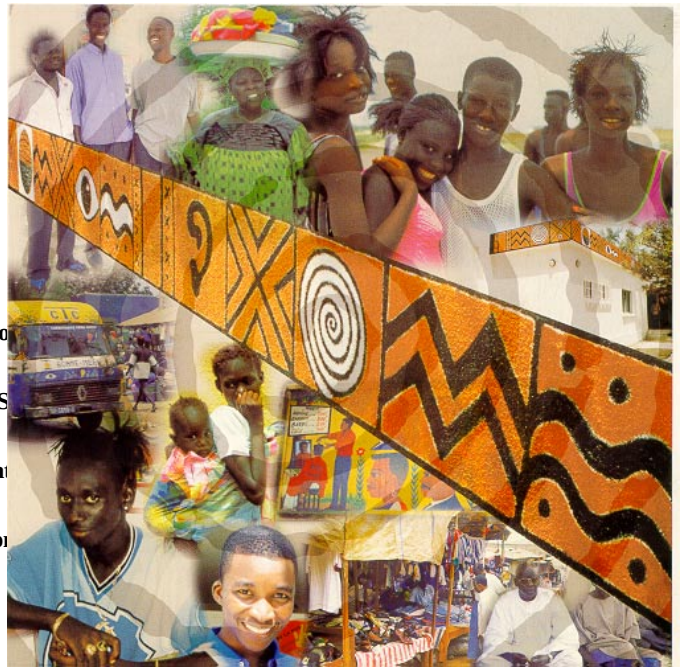
APPENDIX 1

QUESTIONNAIRE

FORUT-SENEGAL
Avenue Cheikh Anta Diop X Canal IV
B.P. 8482 Dakar Yoff
Tel : (221) 821 07 71
Fax : (221) 823 97 72
www.telecomplus.sn/forut
Email

ENQUÊTE SUR L'ALCOOL ET LA DROGUE DANS L'ENSEIGNEMENT SECONDAIRE AU SÉNÉGAL

QUESTIONNAIRE



Ministère de l'Education Natio

Ministère de la Famille, de la S

Programme des Na

Organisatio

Enquête sur l'Alcool et les drogues dans les etablissements de l'enseignement secondaire

Ce questionnaire n'est pas un examen encore moins un concours : les réponses aux questions doivent simplement correspondre à votre expérience ou votre situation. Vous êtes donc priés d'y répondre scrupuleusement et sincèrement.

Pour chaque question, choisir la réponse qui s'approche le plus de *votre cas* personnel et mettre une X dans la case correspondante. Prenez pour chaque question **une seule réponse** en vous inspirant de l'exemple suivant :

Avez-vous bu de l'eau pendant les 30 derniers jours ?

❑ 1 Non

❑ 2 Oui, pendant 1 - 5 jours

❑ 3 Oui, pendant 6 - 19 jours

☒ 4 Oui, pendant plus de 20 jours

❑

La réponse choisie est "4", indiquant que la personne qui a répondu à la question a bu de l'eau pendant 20 jours ou plus durant les 30 derniers jours.

Comme vous le verrez, ce questionnaire est anonyme ; vous n'aurez aucune information à donner, concernant votre identité. Mais il vous faudra répondre à toutes les questions pour que ce questionnaire soit valable ; même si une question vous paraît redondante, c'est à dire si elle vous paraît avoir déjà été posée, donnez quand même une réponse. Aussi, après avoir fini, **vous voudrez bien relire l'ensemble de vos réponses pour vérifier si vous n'avez pas omis une question.**

I. Préliminaires

1. Dans quelle série êtes-vous inscrit ?
   - ❑ 1 Série L
   - ❑ 2 Série S
   - ❑ 3 Série F
   - ❑ 4 Série G
   - ❑ 5 Série T

2. Etes-vous un garçon ou une fille ?
   - ❑ 1 Fille
   - ❑ 2 Garçon

3. Où êtes-vous né(e) ?
   - ❑ 1 Dans une ville
   - ❑ 2 Dans un village

4. Quel âge avez-vous ?
   - ❑ 1 moins de 16 ans
   - ❑ 2 16 ans
   - ❑ 3 17 ans
   - ❑ 4 18 ans
   - ❑ 5 19 ans
   - ❑ 6 plus de 19 ans

5. Quelle classe fréquentez-vous ?
   - ❑ 1 Seconde
   - ❑ 2 Première
   - ❑ 3 Terminale

6. Où avez-vous effectué votre cycle primaire ?
   - ❑ 1 Dans une école d'un village
   - ❑ 2 Dans une école d'une ville

7. Où avez-vous effectué votre premier cycle du secondaire (CES ou CEM) ?
   - ❑ 1 Dans un collège d'une petite ville
   - ❑ 2 Dans un collège d'une grande ville

8. Quel est le niveau d'instruction de votre père ? (*Indiquez seulement le niveau le plus élevé*)

- ❑ 1 N'a pas fréquenté l'école
- ❑ 2 Alphabétisé
- ❑ 3 Ecole élémentaire
- ❑ 4 Ecole secondaire
- ❑ 5 Enseignement supérieur
- ❑ 6 Je ne sais pas

9. Quel est le niveau d'instruction de votre mère ? (*Indiquez seulement le niveau le plus élevé*)

- ❑ 1 N'a pas fréquenté l'école
- ❑ 2 Alphabétisée
- ❑ 3 Ecole élémentaire
- ❑ 4 Ecole secondaire
- ❑ 5 Enseignement supérieur
- ❑ 6 Je ne sais pas

10. Situation matrimoniale du père

- ❑ 1 Marié
- ❑ 2 Divorcé
- ❑ 3 Veuf
- ❑ 4 Célibataire
- ❑ 5 Je ne sais pas

11. Situation matrimoniale de la mère

- ❑ 1 Mariée
- ❑ 2 Divorcée
- ❑ 3 Veuve
- ❑ 4 Célibataire
- ❑ 5 Je ne sais pas

12. Vos parents sont-ils divorcés ?

- ❑ 1 Non
- ❑ 2 Oui

13. Chez qui habitez-vous ?

- ❑ 1 Chez mes deux parents
- ❑ 2 Chez mon père
- ❑ 3 Chez ma mère
- ❑ 4 Chez un autre parent

14. Bénéficiez-vous des commodités suivantes à la maison ?

14.1 Télévision
- ❑ 1 Non
- ❑ 2 Oui

14.2 Réfrigérateur
- ❑ 1 Non
- ❑ 2 Oui

14.3 Cuisinière à gaz
- ❑ 1 Non
- ❑ 2 Oui

14.4 Téléphone
- ❑ 1 Non
- ❑ 2 Oui

14.5 Chaîne à musique
- ❑ 1 Non
- ❑ 2 Oui

14.6 Fourneau à gaz (Blip banekh, nopalé)
- ❑ 1 Non
- ❑ 2 Oui

15. Quel moyen utilisez-vous pour aller à l'école ?
(Indiquez seulement le moyen le plus fréquent)

- ❑ 1 A pied
- ❑ 2 Par transport en commun
- ❑ 3 Par la voiture de vos parents
- ❑ 4 A bicyclette
- ❑ 5 En vélomoteur

❑ 6 Autres

16. Habitez-vous loin de votre école ?

❑ 1 Très près de l'école (moins d'1 km)

❑ 2 Assez près de l'école (1 à 2 km)

❑ 3 Loin de l'école (3 à 4 km)

❑ 4 Très loin de l'école (5 à 6 km)

❑ 5 Trop loin de l'école (plus de 6 km)

Pour chaque partie qui suit, vous devez lire attentivement toutes les questions de chaque rubrique et répondre à chacune de ces questions.

II. Tabac et Alcool

Tabac

2.1.1 Avez-vous déjà fumé, chiqué ou reniflé un produit tabagique quelconque (cigarettes, cigares, tabac de pipe, tabac à chiquer, produits à sniffer, *tabasaba, periis, poone*) ?

- ❑ 1 Non
- ❑ 2 Oui

2.1.2 Durant les 12 derniers mois, avez-vous fumé, chiqué ou reniflé un produit tabagique quelconque ?

- ❑ 1 Non
- ❑ 2 Oui

2.1.3 Durant les 30 derniers jours avez-vous fumé, chiqué ou reniflé un produit tabagique quelconque ?

- ❑ 1 Non
- ❑ 2 Oui, il y a 1 à 5 jours
- ❑ 3 Oui, il y a 6 à 19 jours
- ❑ 4 Oui, il y a 20 jours et plus

2.1.4 Si vous avez déjà fumé, chiqué ou prisé du tabac, quel âge aviez-vous la première fois ?

- ❑ 1 10 ans ou moins
- ❑ 2 11-12 ans
- ❑ 3 13-14 ans
- ❑ 4 15-16 ans
- ❑ 5 17-18 ans
- ❑ 6 19 ans ou plus

2.1.5 Parmi vos amis, combien pensez-vous fument, chiquent ou reniflent du tabac ?

- ❑ 1 Aucun
- ❑ 2 Peu
- ❑ 3 Beaucoup
- ❑ 4 Tous
- ❑ 5 Je ne sais pas

❑ 1 Aucun

❑ 2 Peu

❑ 3 Beaucoup

❑ 4 Tous

❑ 5 Je ne sais pas

2.1.6 Parmi les élèves de votre classe, combien pensez-vous fument, chiquent ou reniflent du tabac ?

2.1.7 Chez vous, qui fume, chique ou renifle un produit tabagique **?**

2.1.7.1 Père

❑ 1 Non

❑ 2 Oui

2.1.7.2 Mère

❑ 1 Non

❑ 2 Oui

2.1.7.3 Frère

❑ 1 Non

❑ 2 Oui

2.1.7.4 Sœur

❑ 1 Non

❑ 2 Oui

2.1.7.5 Un autre membre de la famille

❑ 1 Non

❑ 2 Oui

Alcool

2.2. 1 Avez-vous déjà consommé une boisson alcoolisée quelconque (tels que bière, vin, alcool, *seung*, *sum-sum* etc. ?

❑ 1 Non

❑ 2 Oui

2.2. 2 Durant les 12 derniers mois avez-vous pris une boisson alcoolique quelconque ?

❑ 1 Non

❑ 2 Oui

2.2. 3 Durant les 30 derniers jours avez-vous pris une boisson alcoolique quelconque ?

❑ 1 Non

❑ 2 Oui, Il y a 1 à 5 jours

❑ 3 Oui, il y a 6 à 19 jours

❑ 4 Oui, il y a 20 jours et plus

2.2. 4 Actuellement, quelle est la fréquence de votre consommation de boissons alcoolisées ? Indiquez dans votre estimation les moments où vous avez bu une petite quantité ?

2.2. 4.1 Bière industrielle (Flag, Cardinal, La Gazelle, Heineken, Stork, Guiness, ou autre).

❑ 1 Jamais
❑ 2 Occasionnellement
❑ 3 Une fois par mois
❑ 4 Une fois par semaine
❑ 5 Une fois par jour

2.2. 4.2 Bière de fabrication domestique, vin de palme (*bungkaï, seung*).

❑ 1 Jamais
❑ 2 Occasionnellement
❑ 3 Une fois par mois
❑ 4 Une fois par semaine
❑ 5 Une fois par jour

2.2. 4.3 Vin importé (Kiravi, Valpierre, Champagne, Bon Bouquet, etc.).

❑ 1 Jamais
❑ 2 Occasionnellement
❑ 3 Une fois par mois
❑ 4 Une fois par semaine
❑ 5 Une fois par jour

2.2. 4.4 Liqueur et spiritueux (Ricqles, Whisky, Cognac, Gin, etc.).

❑ 1 Jamais
❑ 2 Occasionnellement
❑ 3 Une fois par mois
❑ 4 Une fois par semaine
❑ 5 Une fois par jour

2.2. 4.5 Boissons distillées localement (*sum-sum - kana*)

❑ 1 Jamais
❑ 2 Occasionnellement
❑ 3 Une fois par mois

❑ 4 Une fois par semaine ❑ 5 Une fois par jour

2.2. 4.6 Avez-vous déjà bu jusqu'à être ivre ?

❑ 1 Non, jamais
❑ 2 Oui, une fois
❑ 3 Oui, 2 à 3 fois
❑ 4 Oui, 4 à 10 fois
❑ 5 Oui, plus de 10 fois

2.2. 4.7 Parmi vos amis, combien, pensez-vous, consomment de la boisson alcoolisée.

❑ 1 Aucun
❑ 2 Peu
❑ 3 Beaucoup
❑ 4 Tous
❑ 5 Je ne sais pas

2.2. 4.8 Parmi les élèves de votre classe, combien, pensez-vous, consomment de la boisson alcoolisée.

❑ 1 Aucun
❑ 2 Peu
❑ 3 Beaucoup
❑ 4 Tous
❑ 5 Je ne sais pas

2.2. 4.9 Chez vous, qui consomme des boissons alcoolisées ?

2.2.4.9.1 Père
❑ 1 Non
❑ 2 Oui

2.2.4.9.2 Mère
❑ 1 Non
❑ 2 Oui

2.2.4.9.3 Frère
❑ 1 Non
❑ 2 Oui

2.2.4.9.4 Sœur
❑ 1 Non
❑ 2 Oui

2.2.4.9.5 Un autre membre de la famille
❑ 1 Non

❑ 2 Oui

2.2. 4.10 Si vous avez déjà consommé des boissons alcoolisées, quel âge aviez-vous la première fois ?

❑ 1 Non, jamais
❑ 2 10 ans ou moins
❑ 3 11-12 ans
❑ 4 13-14 ans
❑ 5 15-16 ans
❑ 6 17-18 ans
❑ 7 19 ans ou plus

III Psychotropes et stupéfiants

Hallucinogène

3.1.1 Avez-vous déjà fumé du cannabis ou chanvre indien (*yamba*, *marijuana*, *joint*, *ganja*, hashish) ?

❑ 1 Non
❑ 2 Oui

3.1.2 Durant les 12 derniers mois avez-vous fumé du cannabis, ou chanvre indien (yamba, marijuana, joint, *ganja*, *hashish*) ?

❑ 1 Non
❑ 2 Oui

3.1.3 Durant les 30 derniers jours avez-vous fumé du cannabis ou chanvre indien ?

❑ 1 Non
❑ 2 Oui, il y a 1 à 5 jours
❑ 3 Oui, il y a 6 à 19 jours
❑ 4 Oui, il y a 20 jours et plus

3.1.4 Parmi vos amis, combien pensez-vous, fument du cannabis, ou chanvre indien (*yamba*), au moins une fois par semaine

❑ 1 Aucun
❑ 2 Peu
❑ 3 Beaucoup
❑ 4 Tous

3.1.5 Parmi les élèves de la classes, combien pensez-vous, fument du cannabis, ou chanvre indien (*yamba*), au moins une fois par semaine

❑ 1 Aucun
❑ 2 Peu
❑ 3 Beaucoup
❑ 4 Tous

Tranquillisants

3.2.1. Avez-vous déjà pris un de ces produits (**Valium, Librium, Lysanxia, Temesta, Nozinan,** ou autres **pills** sans que cela ne vous soit prescrit par un médecin ?

- ❑ 1 Non
- ❑ 2 Oui

3.2.2. Connaissez-vous un ou plusieurs de ces produits (**Valium, Librium, Lysanxia, Temesta, Nozinan,** ou autres **pills)** ?

- ❑ 1 Non
- ❑ 2 Oui

3.2.3. Avez-vous membre de votre famille qui prend un de ces produits (**Valium, Librium, Lysanxia, Temesta, Nozinan,** ou autres **pills**) sans que cela ne lui soit prescrit par un médecin ?

- ❑ 1 Non
- ❑ 2 Oui

3.2.4. Connaissez-vous un élève de votre classe qui prend un de ces produits (**Valium, Librium, Lysanxia, Temesta, Nozinan,** ou autres **pills)** sans que cela ne vous soit prescrit par un médecin ?

- ❑ 1 Non
- ❑ 2 Oui

Euphorisants

3.3.1 Avez-vous déjà reniflé ou inhalé (*gainz*) des produits tels que colle, aérosol, dissolvant, diluant cellulosique, pour être ivre (Ici, ne pas prendre en compte les produits fumés) ?

- ❑ 1 Non
- ❑ 2 Oui

3.3.2 Durant les 12 derniers mois avez-vous reniflé ou inhalé des produits tels que colle, aérosol, diluant cellulosique dissolvant, pour être ivre (Ici, ne pas prendre en compte les produits fumés) ?

- ❑ 1 Non
- ❑ 2 Oui

3.3.3 Durant les 30 derniers jours avez-vous reniflé ou inhalé des produits tels que colle, aérosol, diluant cellulosique dissolvant, pour être ivre (Ici, ne pas prendre en compte les produits fumés) ?

- ❑ 1 Non
- ❑ 2 Oui, il y a 1 à 5 jours
- ❑ 3 Oui, il y a 6 à 19 jours
- ❑ 4 Oui, il y a 20 jours et plus

3.3.4 Quel âge aviez-vous lorsque vous avez, pour la première fois, reniflé ou inhalé une substance pour être ivre?

- ❑ 1 Non, jamais
- ❑ 2 10 ans ou moins
- ❑ 3 11-12 ans

❑ 4 13-14 ans

❑ 5 15-16 ans

❑ 6 17-18 ans

❑ 7 19 ans et plus

Stupéfiants

3.4.1 Avez-vous déjà pris de l'héroïne (*poudre, neige, H)?*

❑ 1 Non

❑ 2 Oui

3.4.2 Avez-vous membre de votre famille qui prend un de l'héroïne (poudre, neige, H)?

❑ 1 Non

❑ 2 Oui

3.4.3 Connaissez vous un élève de votre classe qui prend de l'héroïne ?

❑ 1 Non

❑ 2 Oui

3.4.4 Avez-vous déjà pris de la cocaïne ?

❑ 1 Non

❑ 2 Oui

3.4.5 Avez-vous membre de votre famille qui prend un de la cocaïne ?

❑ 1 Non

❑ 2 Oui

3.4.6 Connaissez vous un élève de votre classe qui prend de la cocaïne ?

❑ 1 Non

❑ 2 Oui

3.4.7 Avez-vous déjà pris de l'ecstasy ?

❑ 1 Non

❑ 2 Oui

3.4.8 Avez-vous membre de votre famille qui prend un de l'ecstasy ?

❑ 1 Non

❑ 2 Oui

3.4.9 Connaissez vous un élève de votre classe qui prend de l'ecstasy ?

❑ 1 Non

❑ 2 Oui

Comment passez-vous votre temps ?

4.1 Je regarde mes émissions préférées à la Télévision

	1	2	3	4	5
Emissions	**Très souvent**	**Souvent**	**Parfois**	**Rarement**	**Jamais**
4.1.1 Je regarde des séries américaines à la télé (Top Modèle, Mr Cooper, Friends, Nounou d'enfer, Renegade, etc.)					
4.1.2 Je regarde des séries françaises à la télé (Jamais deux sans toi, Navaro, Julie Lescaut, Hélène et les garçons ; To be free, etc.)					
4.1.3 Je regarde des séries étrangères (Rosa Salvaje, Marie Mar, Derrick , etc.)					
4.1.4 Je regarde les informations de la Télévision sénégalaise					
4.1.5 Je regarde les informations des chaînes étrangères (CNN, CFI, TV5, etc.)					
4.1.6 Je regarde les séries et Téléfilms africains (Faxman, Bara yëggo, Faut pas facher, Daaray cocc, Diamonoy Tey, etc)					
4.1.7 Je regarde les chaînes musicales (MCM, MTV, etc.)					
4.1.8 Je regarde des vidéo films ou des vidéo-clips américains					
4.1.9 Je regarde des vidéo films ou des vidéo-clips français					

4.2 Je vais au cinéma voir des films

	1	2	3	4	5
Films	**Très souvent**	**Souvent**	**Parfois**	**Rarement**	**Jamais**
4.2.1 Je vais au cinéma voir des films américains.					
4.2.2 Je vais au cinéma voir des films français.					
4.2.3 Je vais au cinéma voir des films africains.					

4.3 J'écoute mes radios préférées

	1	2	3	4	5
1.1.1.1.1 Radio	**1.1.1.1.2 Très souvent**	**1.1.1.1.3 Souvent**	**1.1.1.1.4 Parfois**	**1.1.1.1.5 Rarement**	**1.1.1.1.6 Jamais**
4.3.1 J'écoute la RTS (Dakar FM, Chaîne Inter, Chaîne Nationale)					
4.3.2 J'écoute Sud FM					
4.3.3 J'écoute Walf FM					
4.3.4 J'écoute Radio Nostalgie					
4.3.5 J'écoute Radio Dunya					
4.3.6 J'écoute 7 FM					
4.3.7 J'écoute Africa N° 1					
4.3.8 J'écoute RFI					
4.3.9 J'écoute BBC Afrique					
4.3.10 J'écoute les radios des pays voisins (Gambie, Guinée Bissau, Mali, Mauritanie)					

4.4 Je lis mes journaux préférés

	1	2	3	4	5
	Très souvent	**1.1.1.1.7 Souvent**	**Parfois**	**Rarement**	**Jamais**
4.4.1 Je lis la presse locale au quotidien (Sud Quotidien, Wal Fadjri, Soleil, le Matin, Info 7 etc.)					
4.4.2 Je lis la presse étrangère au quotidien, en français (Le Monde, Libération, etc.)					
4.4.3 Je lis la presse étrangère au quotidien en langue étrangère (Hérald Tribune, Times, etc.)					
4.4.4 Je lis des magazines africains (Télémag, Nouvel Horizon, Amina, Jeune Afrique, Planète Jeune, Afrique Foot, etc.)					
4.4.5 Je lis des magazines étrangers (Paris					

	Match, Voici, OK Podium, Femme Actuelle, Girls, etc.)					
4.4.6	Je lis des romans de la littérature africaine qui ne sont pas au programme scolaire.					
4.4.7	Je lis des romans de la littérature étrangère qui ne sont pas au programme scolaire.					

4.5 J'écoute ma musique préférée

	1	**2**	**3**	**4**	**5**

	Très souvent	Souvent	Parfois	Rarement	Jamais
4.5.1 J'écoute de la musique mbalax.					
4.5.2 J'écoute de la musique des îles (zouk, funana, etc.).					
4.5.3 J'écoute de la musique Rap, Techno, Reggae					
4.5.4 J'écoute de la musique cubaine.					
4.5.5 J'écoute de la musique traditionnelle sénégalaise (Samba Diabaré, Yela, Bugarabu, Leele, Yandé Codou etc.).					
4.5.6 J'écoute de la musique légère (blues, slow).					
4.5.7 J'écoute de la musique classique occidentale (Beethoven, Mozart, Bach, Vivaldi etc.).					

5

Pour les questions suivantes, choisir parmi les réponses proposées dans chacune des sous questions, celle qui est la plus proche de votre opinion personnelle. (Mettre une croix dans la case correspondante.)

❑ 1 Je n'aimerais pas sauter en parachute.

❑ 2 Je voudrais apprendre à sauter en parachute.

❑ 1 Sortir seul la nuit après 1 heure du matin est très excitant.

❑ 2 Sortir seul la nuit après 1 heure du matin est très dangereux.

❑ 1 Je suis la mode sans tenir compte de l'opinion de mon entourage.

❑ 2 Je tiens compte de l'opinion de mon entourage dans mes choix vestimentaires.

❑ 1 Il y a des films que j'aime revoir une seconde ou troisième fois.

❑ 2 Je ne supporte pas de revoir un film que j'ai déjà vu.

❑ 1 J'ai plaisir à voir des scènes érotiques dans les films.

❑ 2 Il y a à mon avis, trop d'érotisme dans les films.

❑ 1 Je n'aime pas rester le week-end à la maison sans sortir, c'est terriblement ennuyeux.

❑ 2 J'adore rester le week-end à la maison pour mieux me reposer.

❑ 1 Avoir des relations sexuelles est tellement sérieux qu'il faut attendre le mariage pour le faire.

❑ 2 Une personne doit avoir une certaine expérience sexuelle avant le mariage.

❑ 1 J'aime parfois faire des choses qui font un peu peur.

❑ 2 J'évite les activités qui sont un peu dangereuses.

❑ 1 Les personnes conduisant les grosses motos doivent avoir une sorte de besoin inconscient de risquer leur vie.

❑ 2 J'aimerais conduire une grosse moto.