

- Banning smoking in the primary, secondary, technical-professional schools and institutions of higher education, and with regard to the last two cases, excepting the respective dining-halls or similar places;
- Banning smoking in the reception place of the governmental departments, the rooms of electronic games, enclosed sports spaces, cinemas, theatres and other show places in enclosed spaces, museums, libraries, auditoriums, public meeting rooms, reading rooms and room for expositions;
- Banning smoking in the port and airport installations, vehicles and ships that belong to the collective transport of passengers, taxis and elevators.

In addition, the Department of Health launched a smoking or health program in 1996, as well as World No Tobacco Day was commemorated annually by the Department of Health Day, educational and health promotional programs are mostly school-based, periodic public awareness campaigns for health regarding.

Accurate and representative prevalence data on tobacco use among children and young adults are not available. However, a family-based survey conducted in 1997 by Macao Health Department and consumer's council revealed the prevalence of overall tobacco use is 35.8 %, and 31.6% in male and 4.2% in female respectively. A survey for police and teachers conducted by Health Department in 1999, showed that 45.8% in police and 25.3% in teacher smoke or use tobacco, and males were more likely than female to use tobacco.

II. Goals and objectives

The GYTS is a school-based tobacco survey which focuses on adolescents age 13-15 years. It assesses students' attitudes, knowledge and behavior related to tobacco use and exposure to environmental tobacco smoke (ETS), as well as youth exposure to prevention activities in school curricula, community programs, and media messages aimed at

preventing and reducing youth tobacco use. Also the GYTS provides information on where tobacco products are obtained and used, as well as the effectiveness of enforcement measures.

The GYTS will attempt to address the following issues:

- Determining the level of tobacco use
- Estimating the age of initiation of cigarette use
- Estimating the levels of susceptibility to become a cigarette smoker
- Estimating the exposure to tobacco advertising
- Identifying key intervening variables, such as attitudes and beliefs on behavioral norms with regard to tobacco use among young people
- Assessing the extent to which major prevention programs are reaching school-based populations and establish the subjective opinions of those populations regarding such interventions.

III. Methods

3.1 Study design and sample

The 2000-2001 Macao GYTS was a school-based cross sectional survey which employed a two-stage cluster sample design to produce a representable sample. Students in grades six to form 3 which contained 40 or more students were included in the sampling frame.

Data about schools (number of students by section/class and range of ages) were obtained from the Department of Youth and Education.

The first stage sampling frame consisted of all schools with grades six, form one, form two, or form three. The data was extracted from the Department of Youth and Education and was forwarded to CDC to draw the study sample. Schools were selected with probability proportional to school enrollment size. A total of 42 schools were selected.

The second sampling stage consisted of systematic equal probability sampling (with a random start) of classes from each school that participated in the survey. All classes in

the selected schools were included in the sampling frame. All students in the selected classes were eligible to participate in the survey. The total number of eligible classes accounted for 49 with students equal to or over 40 students per class.

3.2 The Questionnaire

The questionnaire consisted of a “core” component and an “optional” component. The core questions allow for regional as well as international comparisons of the survey results, while the optional questions concentrate on specific issues pertaining to individual countries.

Macao used all 56 questions of the core component of the questionnaire, few questions were modified to suit the prevailing peculiarities. The optional component of the questionnaire included six questions to investigate other uses of tobacco in Macao.

A weight has been associated with each questionnaire to reflect the likelihood of sampling each student and to reduce bias by compensating for differing patterns of nonresponse. The weight used for estimation is given by: $W=W1*W2*F1*F2*F3*F4$

W1= the inverse of the probability of selecting the school.

W2= the inverse of probability of selecting the classroom within the school.

F1= a school-level nonresponse adjustment factor calculated by school size category (small, medium, large)

F2= a class adjustment factor calculated by school

F3= a student-level nonresponse adjustment factor calculated by class.

F4= a post stratification adjustment factor calculated by gender and grade.

The weighted results can be used to make important inferences concerning tobacco use risk behaviors of students in grade six, form one, form two, or form three.

Survey procedures were designed to protect the student’s privacy by allowing for anonymous and voluntary participation. The self-administered questionnaire was administered in the classroom. Students recorded their responses on an answer sheet.

3.3 Data collection

The Department of Health collected the schools number from the Department of Youth and Education for sample selection, issuing necessary letters to the randomly selected schools, updating the sample information and contacting schools. The Department of Health was responsible for selecting, training and supervising the researchers. All researchers reported back to the center coordinator on daily basis, for assistance in cases of nonresponse, logistics and job completion. The participants were assigned to schools and were responsible for the delivery and collection of all survey documentation forms, answer sheets and questionnaires.

3.4 Data analysis

These answer sheets were read and data was encoded at the US Center for Disease Control and Prevention in Atlanta. The dataset was analyzed using EPI INFO 2002, that accounted for the complex sampling design and weighing factors in the data set, to calculate standard errors and prevalence estimates. Statistical differences included in this report were determined by comparing the range of the 95% confidence intervals (95%CI) for the estimates. If the ranges for the 95%CI did not overlap then the differences were statistically significant.