

MATERIALS AND METHODS

SAMPLE DESCRIPTION

GYTS Peru 2000 was a school-based transversally cut survey that used a bi-stage design by conglomerates to produce four representative samples for the cities of Lima, Trujillo, Tarapoto and Huancayo. (Figure 1) The survey was applied during the months of June, July, and August 2000.

Separate samples were taken from schools located in the four selected cities. Every school (public and private) that provided high school education in each of the four cities was included in the sampling program.

The data used to select the sample was obtained from the 1999 National School Census, provided by the Peruvian Ministry of Education.

Within each city a two-stage sample was used to produce a representative sample of students in these schools. The first stage consisted of all the schools that provided any of the second, third and/or fourth level high-school education. Schools were selected with a proportional probability to the size of the school involved. Fifty schools were selected for Lima, 25 for Trujillo, 13 for Tarapoto and 25 for Huancayo.

The second stage of the sampling methodology consisted of an equal probability systematic sampling with a random beginning, of classrooms in each school that participated in the survey. All the high-school second, third and fourth grades in the selected schools were included in the design of the sample. All the students in the selected classrooms were eligible to participate in the survey. The number of classrooms selected in each school fluctuated between 1 and 3.

QUESTIONNAIRE

The GYTS-Peru questionnaire was divided into three parts:

- The first part contained 57 questions related to tobacco. These questions were designed by a group of experts on tobacco addiction from 8 of the different countries participating in the GYTS Project, all of which were members of the Tobacco Free Initiative Program (TFI/WHO/UNICEF). To date, this group of questions has been used in all the surveys applied in more than 40 countries throughout the world during the past three years.
- The second part has 22 questions selected from a database of alternate questions related to tobacco consumption and health, and intra-family relationships.
- The third part of the survey has 20 questions elaborated by CEDRO's Research Unit staff, which included epidemiological data on alcohol and illegal drugs (marijuana, coca paste/crack, and cocaine) consumption, perception or knowledge on drugs, access, and family and inter-personal relationships.

This report only presents epidemiological results gathered for tobacco consumption.

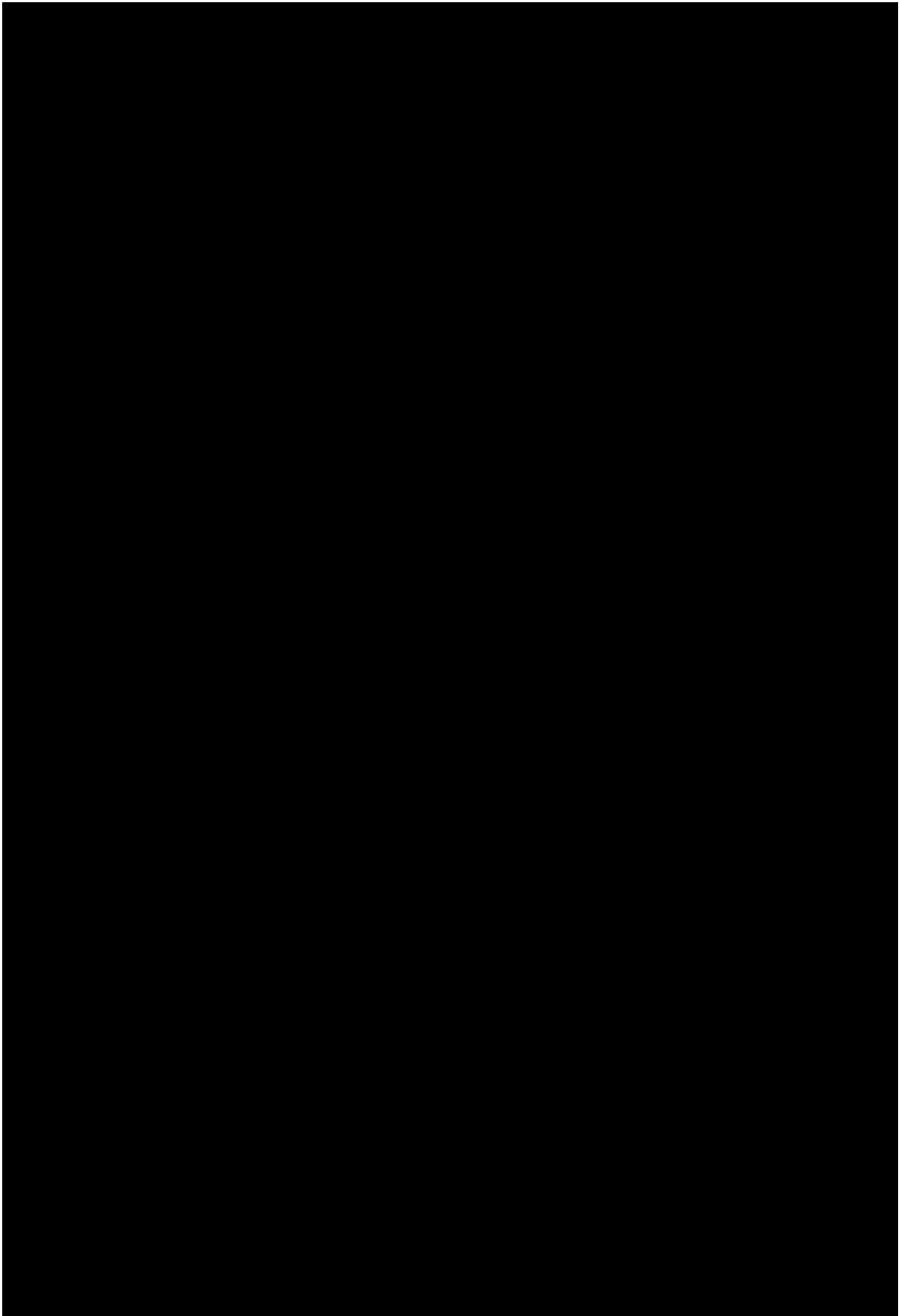


Figure 1: Geographical location of the four Peruvian cities included in the GYTS - Peru 2000.

DATA COLLECTION

CEDRO was in charge of coordinating data collection activities. Before it started, coordination meetings took place with Ministry of Education officials who provided their authorization to recruit schools from the four cities. In addition, meetings took place with the schools to coordinate:

- Permission from school principals to develop the survey.
- Gather information regarding number of eligible classrooms in order to facilitate design of classroom sample.
- Logistical arrangements with school administrators to apply the survey.
- Gather information regarding the best access routes to the school, and on schools located in the same route or geographical zone.

School Principals were informed on the objectives of the survey, how it would be applied and the procedures to be used to ensure anonymity and confidentiality for students and the school. Students' parents were also advised during data collection, procedures were designed for the application of the survey oriented to protect the students' privacy through anonymous and voluntary participation. The questionnaire was self-administered during class. The students registered their answers directly in specially prepared answer sheets that would be read through computerized scanning. The questionnaire had 99 questions and had duration of approximately 45 minutes. It was to be completed during class.

Data recollection took place between June 1st and August 29th, 2000. The study had the participation of 25 fully trained surveyors, as well as 4 supervisors.

DATA ANALYSIS

Punctual estimates

To calculate punctual estimates (e.g., percentages, averages) from the GYTS data, sample weights were used which were calculated at the moment of selecting the samples. These sample weights adjust any probability of unequal selection, non-response, and disproportionate selection of different population groups. To carry out the assumptions regarding the studied population, we had to use sampling weights.

Sample Errors

The procedures for the estimation of sample differences and standard errors from certain statistical software are based on the assumption of a simple randomized sample scheme. GYTS has a more complex sampling design that also estimates the variations and standard sampling errors. Statistical packages that accept this complex design were used during this survey: SUDAAN and the C-Sample package from Epi-Info version 6.0. The SUDAAN software was used to calculate sampling errors and percentage weights. The C-Sample software from Epi-Info version 6.0 was used to run simple averages and frequencies taken into account within the sample design, knowing the stratum data, primary units of sampling, and final weight of the sample.

Weights

A weight was associated to each questionnaire to reflect the credibility of the sampling for each student and reduce dispersion by compensating the different patterns of reply. The weight (W) used for estimation was calculated with the following formula:

$$W = W1 * W2 * f1 * f2 * f3 * f4$$

Where:

W1 = the inverse of the probability of selecting the school

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

f1 = an adjustment factor for the level of non-response of the school calculated by the size category (small, medium, big)

f2 = an adjustment factor for the classroom calculated by school

f3 = an adjustment factor for the level of students' non-response calculated by classroom

f4 = a post-stratification adjustment factor calculated by sex and age

The weighted results were used to make assumptions regarding the use of drugs by students attending second, third and fourth high school grades.

Staff participating in the Study

The study had the collaboration and authorization of the Peruvian Ministry of Education. The Coordinator of the study was Dr. Alfonso Zavaleta, Chief of CEDRO's Research Unit. The following staff from CEDRO's Research Unit also participated: Dr. Ramiro Castro de la Mata; Economist Virgilio Chavez; Psychologist Luis Tapia; Mr. Eduardo Romero; Ms. Viviana Maldonado; and Ms. Patricia Nores. Finally, the study had the support of 20 surveyors, and a supervisor each for the cities of Lima, Trujillo, Tarapoto and Huancayo.