Comparison between two household surveys on psychotropic drug use in Brazil: 2001 and 2004

O uso de drogas no Brasil:
comparação de dois levantamentos domiciliares: 2001 e 2004

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Abstract *CEBRID (Brazilian Center of Information on Psychotropic Drugs) conducted two household surveys on drug use in Brazil, the first in 2001 and the second in 2005, making it possible for researchers, for the first time ever, to have a timeline comparison using this type of methodology. The universe studied corresponded to the Brazilian population living in 107 Brazilian cities with more than 200.00 inhabitants. 8,589 people were interviewed in the first survey in 2001, and 7,939 people in the second. Data on prevalence of lifetime use for psychotropic drugs showed that there was a significant increase only in the number of people who had made lifetime use of psychotropic substances (including tobacco and alcohol). In 2001, 19.4% of the interviewees reported having used some type of drug, and the ranking of lifetime drug use in 2004 was 22.8%, a statistically significant increase. There was also a statistically significant increase in lifetime use of alcohol and tobacco in comparison between the two surveys.*
Key words *Household survey, Psychotropic drugs, Alcohol, Tobacco, Brazil*

Resumo *O CEBRID realizou duas pesquisas domiciliares sobre drogas no Brasil, uma em 2001 e uma em 2004, permitindo, pela primeira vez, uma comparação usando a mesma metodologia. O universo estudado correspondeu à população brasileira que vive nas 107 cidades brasileiras com mais de 200.00 habitantes. 8,589 pessoas foram entrevistadas na primeira pesquisa realizada em 2001 e 7,939 pessoas, na segunda. Os dados sobre a prevalência mostraram que houve um aumento significativo do uso na vida de drogas psicotrópicas (inclusive para o tabaco e o álcool). Em 2001, 19,4% dos entrevistados relataram ter usado algum tipo de droga e, em 2004, foi 22,8% de uso na vida de drogas, um aumento estatisticamente significativo. Verificou-se também um aumento estatisticamente significativo no uso na vida de álcool e tabaco na comparação entre os dois levantamentos.*
Palavras-chave *Pesquisa domiciliar, Drogas psicotrópicas, Álcool, Tabaco, Brasil*

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Introduction

In order to develop adequate strategies to prevent psychotropic drug use in a given population, one must first be familiar with the reality of that population. No isolated data are sufficient to yield a profile of society regarding drugs[1]. Two basic categories of information are required for diagnosing the use of psychotropic drugs in a predefined geographical area: general and specific population surveys, and statistical indicators.

For the first category, it can be said that general population surveys contain the most information about overall drug use. Other important drug-related information is obtained from statistical indicators that provide indirect data on the consequences of drug use, among them hospital inpatient treatments for dependence, outpatient dependents, emergency room patients, and data from the Coroner's Office which contains positive forensic identification of different drugs[2]. Another statistical indicator worth mentioning is the number of drug seizures made by law – enforcement agencies[3] (Federal, Civil, and Military Police). Even though Brazil already has a significant amount of data on psychotropic drug use, it still falls short when it comes to two basic factors for implementing effective prevention programs: enlarging and updating the database.

CEBRID (Brazilian Center of Information on Psychotropic Drugs) conducted two household surveys on drug use in Brazil, one in 2001 and one in 2005, making it possible for researchers, for the first time ever, to have a timeline comparison using this type of methodology. Brazil, the largest Latin American country, classified as the 8th in the world's economy, has nearly 189 million inhabitants[4]. Almost 30 million children belong to families earning up to two minimum wages monthly (amounting to less than 100 US dollars). Out of the remaining population, 35–40 million people are the real owners of the Brazilian wealth and from those it is calculated that 5% (nearly 8,800,000 people) are rich indeed.

The main goal of the present study was to compare the data of the two household surveys, conducted in 2001 and in 2005[5,6] in order to analyze the prevalence of use of illicit drugs, alcohol, and tobacco, as well as the abuse of psychotropic medication.

Methodology

The universe studied corresponded to the Brazilian population living in 107 Brazilian cities with more than 200.00 inhabitants, representing 41.3% of the country's total population, according to the data from IBGE[4]. Similar studies were conducted in Brazil by CEBRID, using the same methodology, in the years 1999 in the State of São Paulo[6], and the 107 largest cities in Brazil in 2001 and 2005[5,7]. These surveys were designed to gather information within home, using a stratified conglomerate, probability and self-weighted sample.

The census' sections (usually consisting of some 200 to 300 households) consist of the smallest possible unit for which IBGE[4] (Brazilian Institute of Geography and Statistics) provides socioeconomic information, such as average family income, percentage of college educated heads of the households, number of households by type of household, etc. This information was used to identify, using multivariate statistical techniques, homogeneous section groups, called strata, for each of the cities selected. Stratified sampling is used for this type of survey in order to increase the precision of the estimates while reducing sample size.

The households were selected from the census sections for the survey based on information provided by IBGE. The number of households surveyed in each section was previously set at 24. Households were systematically selected by means of a random starting point. The selection interval for each section was equal to the number of households in the section divided by 24, which is the number of households per sector in the sample.

The surveyors were instructed to start counting households randomly on any street belonging to the Census Section selected, observing the previously defined selection interval. All surveyors were instructed not to count commercial establishments, hospitals, factories, boarding houses, motels, etc. In the case of apartment buildings, each apartment was to be counted as a household, so more than one interview could be made in the same building, depending on the number of apartments in that building.

A respondent was chosen randomly from each household, through a selection process over which the interviewer had no control. The technique used to determine who should be selected

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in each household was devised by Kish[8]. The age group ranged from 12 to 65 years and only people within that range were eligible.

The questionnaire applied was the one developed by SAMHSA[9] (Substance Abuse and Mental Health Services Administration). In addition, to determine the sociodemographic profile of the person interviewed, the survey included a screening of lifetime use of different psychotropic drugs, including anabolic steroids. The questionnaire was adapted to the Brazilian reality, comparing fifty people who answered it twice within a 30-day interval. Correlation between test and retest results was analyzed by the Kappa coefficient for nominal variables[10]. In total, the average Kappa value was 0.79, with extreme values of 1 for gender and level of education[11].

The estimates for alcohol and tobacco dependence were obtained by means of the NHSDA method[9,12] ("National Household Surveys on Drug Abuse"). The NHSDA questionnaire assesses six DSM – III – R criteria[13], as follows:

. Spent most of the time obtaining, using, or recovering from the effects of drugs;

. Took drugs in larger doses or more often than intended;

. Tolerance (larger doses to produce the same effect);

. Was at physical risk under the effect of drugs, or right after the effect had worn off (for example: driving a car, riding a motorcycle, operating machinery, swimming, etc.);

. Has personal problems (such as family, emotional, psychological, legal, at work, with friends);

. Wants to reduce intake of a given drug, or quit using it altogether.

According to the NHSDA, respondents are defined as being dependent on a substance if they meet at least two of the aforementioned criteria[14,15].

The variables included in the survey for prevalence of psychotropic drug use are expressed as proportions, and can be used in order to estimate the use of a certain drug in a population. Therefore, the estimates calculated are subject to the sampling errors inherent to data collection process, since this is a probabilistic sample. The coefficient of variation enables one to describe to what extent the estimate can be affected by sampling errors.

The comparison between the prevalence of psychotropic drug lifetime use and the estimates of alcohol and tobacco dependence between the two surveys[5,7] was made using the Z statistics. The results are reported as two proportions and the corresponding associated lower and upper limits of the 95% confidence interval (95%CI). A p value of less than 0.05 was considered to be significant[16].

Results

8,589 people were interviewed in the first household survey, conducted in 2001, and 7,939 people in the second survey. Table 1 shows the distribution of interviewees by sociodemographic characteristics, comparing the surveys conducted by CEBRID in 2001 and 2005. Note that the sample is well balanced gender-wise for each age group. Regarding the distribution of interviewees by social class, the percentage of participants from the upper socioeconomic classes decreased in the comparison between 2001 and 2005, while the percentage of participants from the lower classes increased. The level of education improved, since there was a decrease in the number of illiterate individuals in the second survey.

Table 2 shows a comparison of psychotropic lifetime drug use, including alcohol and tobacco. There was a statistically significant increase in lifetime use for some drugs such as marijuana, stimulants, benzodiazepines, anabolic steroids, alcohol, and tobacco. There was a statistically significant decrease in lifetime use of anticholinergics. The Confidence Intervals for anabolic steroids, crack and heroin were not included in the 2001 survey; and crack, sedatives, anticholinergics and heroin were not included in the 2005 survey due to the fact that the number of users was too small and therefore had no statistical significance. Heroin use was not detected in either survey.

Finally, Table 3 shows the percentages and estimates for alcohol and tobacco dependent populations, comparing the two surveys (2001 and 2005). The statistical calculations indicate that both the number of alcohol and tobacco dependents remained the same in the two years surveyed.

Table 1. Comparison of sociodemographic characteristics for the samples analyzed in the two Surveys conducted by CEBRID (2001 and 2005) in Brazil at 107 cities with more than 200,000 inhabitants.

Characteristics	Years surveyed			
	2001 (n=8,589)		2005 (n=7,939)	
	Gender			
	Male %	Female %	Male %	Female %
Age groups(years old)				
12 – 17	13.8	10.1	11.4	8.9
18 – 25	18.6	17.8	17.2	15.5
26 – 34	22.0	20.5	23.1	22.1
≥ 35	45.6	51.6	48.3	53.5
Total	100.0	100.0	100.0	100.0
Marital status				
Married	50.2	46.3	46.2	43.4
Single	43.3	38.0	46.0	40.8
Divorced	5.0	8.7	5.6	8.4
Widower	1.5	7.0	2.2	7.4
Total	100.0	100.0	100.0	100.0
Social class*				
Upper	25.0		21.0	
Middle	36.0		37.0	
Lower	39.0		42.0	
Total	100.0		100.0	
Education				
Illiterate/incomplete elemetary school	35.0		28.3	
Elementary school complete	14.1		15.8	
High School				
Incomplete	12.7		14.2	
Complete	22.2		25.8	
College				
Incomplete	5.2		6.7	
Complete	9.5		7.8	
University degree	1.3		1.4	
Total	100.0		100.0	

* Social class is defined by monthly income: Upper = more that 10 minimal salary; Middle = 4 to 10 minimal salary; Lower = less that 4 minimal salary. One minimal salary it is approximately U$ 180.

Discussion

Drug use is viewed with a lot of prejudice. Consequently, people are afraid of openly stating that they engage in this kind of behavior. This fear certainly results in an underestimated universe. Therefore, for example, in a wide-range household survey, data on frequency of use of a given drug is lower when compared to the frequency of use of the same drug by a specific population (students, children in street situation, inmates, sex workers, etc.).

In household surveys, it is fair to assume that interviewees will be more afraid, and their fear can only be overcome with the interviewer's credibility and skill. In order to back up the notion that different sources of data are useful in building a comprehensive and overall picture of drug use in the country, it is worth presenting some data from Australia and Brazil. Cocaine use in household surveys in Australia[17] varied between 2 and 3 percent; among students it was 4 percent, among inmates it varied between 15 and 27 percent, and among sex workers it reached 80 percent. Thus, it can be observed that within certain specific populations the number of cocaine users may increase considerably. In other words, if the survey is conducted in areas known for drug

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Table 2. Prevalence rates and estimated population for lifetime use of different psychotropic drugs, in the two household surveys, in cities in the Brazil with more than 200,000 citizens (2001 and 2005).

Drug	Years surveyed			
	2001 (n=8,589)		2005 (n=7,939)	
	%	Confidence interval 95%	%	Confidence interval 95%
Any drug ▪	19.4	***(16.6 – 22.1)***	22.8	***(18.7 – 27.0)*** †
Marijuana	6.9	***(5.2 – 8.6)***	8.8	***(6.0 – 11.6)*** †
Solvents	5.8	***(4.2 – 7.3)***	6.1	***(3.8 – 8.6)***
Cocaine	2.3	***(1.3 – 3.3)***	2.9	***(1.2 – 4.5)***
Stimulants	1.5	***(0.8 – 2.2)***	3.2	***(1.4 – 4.9)*** †
Benzodiazepines	3.3	***(2.2 – 4.3)***	5.6	***(3.3 – 7.9)*** †
Orexigens	4.3	***(3.0 – 5.6)***	4.1	***(2.1 – 6.1)***
Syrups (codeine)	2.0	***(1.1 – 2.8)***	1.9	***(0.5 – 3.2)***
Hallucinogenics	0.6	***(0.1 – 1.1)***	1.1	***(0.1 – 2.1)***
Crack	0.4	***(*)***	0.7	***(*)***
Sedatives	0.5	***(0.1 – 0.9)***	0.7	***(*)***
Anticholinergics	1.1	***(0.4 – 1.7)***	0.5	***(*)***†
Analgesic opiates	1.4	***(0.6 – 2.1)***	1.3	***(0.2 – 2.4)***
Heroin	0.1	***(*)***	0.09	***(*)***
Alcohol	68.7	***(63.8 – 73.6)***	74.6	***(70.3 – 78.9)*** †
Tabacco	41.1	***(37.5 – 44.7)***	44.0	***(39.1 – 49.0)*** †
	In thousands		In thousands	
Any drug	9,109	***(7,824 – 10,394)***	11,603	***(9,488 – 13,719)***
Marijuana	3,249	***(2,452 – 4,045)***	4,472	***(3,045 – 5,900)***
Solvents	2,710	***(1,987 – 3,433)***	3,121	***(1,911 – 4,330)***
Cocaine	1,076	***(613 – 1,539)***	1,459	***(617 – 2,300)***
Stimulants	704	***(382 – 1,026)***	1,605	***(724 – 2,486)***
Benzodiazepines	1,536	***(1,048 –2,024)***	2,841	***(1,683 – 3,999)***
Orexigens	2,015	***(1,402 – 2,629)***	2,078	***(1,080 – 3,076)***
Syrups (codeine)	931	***(531 – 1,330)***	958	***(273 – 1,644)***
Hallucinogenics	295	***(65 – 524)***	552	***(30 – 1,074)***
Crack	189	***(*)***	381	***(*)***
Sedatives	220	***(35 – 404)***	360	***(*)***
Anticholinergics	495	***(178 – 812)***	275	***(*)***
Analgesic opiates	640	***(299 - 980)***	668	***(94 – 1,241)***
Heroin	25	***(*)***	47	***(*)***
Alcohol	32,324	***(30,015 – 34,633)***	37,953	***(35,760 – 40,147)***
Tabacco	19,328	***(17,629 – 21,028)***	22,398	***(19,896 – 24,901)***

▪ Except for tobacco and alcohol; † Statistically significant differences ($p < 0,05$) – z Test for Difference Between Two Independent Proportions; *Low precision.

use (intentional sample), the prevalence of the reported drug will be higher. This preconceived notion does not apply to household surveys, if the sampling is applied with strictness.

In short, household surveys are valuable for assessing the way in which society as a whole behaves regarding drug use, and hence for the development of public health policies for preventing psychotropic abuse.

Sociodemographic characteristics did not differ much between the two surveys. That seems obvious, since radical social changes take place in association with great tragedies, wars, etc. On the other hand, more than one third of the interviewees were illiterate or had not graduated from high school. The decline in socioeconomic conditions is a reason for concern, featuring an increase in the number of people in the less favored social classes. At least in the largest cities in the Brazil (those with more than 200,000 citizens), the population became poorer.

Data on prevalence of lifetime use for psychotropic drugs showed that there was a significant increase only in the number of people

Table 3. Prevalence rates and estimated population of alcohol and tobacco dependents, in the two household surveys conducted by CEBRID, in cities in the Brazil with more than 200,000 citizens (2001 and 2005).

Drug	Years surveyed			
	2001 (n=8,589)		2005 (n=7,939)	
	%	Confidence interval 95%	%	Confidence interval 95%
Alcohol	11.2	***(9.1 – 13.3)***	12.3	***(9.1 – 15.6)***
Tobacco	9.0	***(7.2 – 10.7)***	10.1	***(7.1 – 13.1)***
	Estimated population			
	In thousands		In thousands	
Alcohol	5,283	***(4.293 – 6.273)***	6,268	***(4.611 – 7.925)***
Tobacco	4,214	***(3.406 – 5.021)***	5,120	***(3.603 – 6.637)***

who had made lifetime use of psychotropic substances (including tobacco and alcohol). In 2001, 19.4% of the interviewees reported having used some type of drug, accounting for an estimated population of 9,109,000 people. In 2005, the ranking of lifetime use drugs was 22.8% (11,603 people), a statistically significant increase.

There was also a statistically significant increase in lifetime use of alcohol and tobacco in the comparison between the two surveys. This result might reflect the strength of advertising campaigns promoting the use of alcohol, especially beer. The advertising seeks to attract the population's attention either by using cartoons or seductive women. Nevertheless, the discussion regarding advertising control in Brazil is still not as far-reaching as it should be, as is the discussion of other prevention strategies aimed at the use of alcohol. With regard to tobacco lifetime use, there was also a significant increase from 2001 to 2005, despite the wide-ranging ban on cigarette advertising. Perhaps the positive results of the ban will come through in the long run. However, in another study carried out among students from elementary to high school, comparing the results of 1997 and 2004, detected a significant decrease in tobacco consumption among the students surveyed. This decrease might be related to changes in public policies in Brazil over the period surveyed, at least among the adolescents[18].

The prevalence of dependence on alcohol and tobacco remained similar in the comparison of the two surveys.

Although surveys with a larger time frame are needed in order to corroborate the results of this survey, there has been an overall increase in the use of drugs in Brazil in the period surveyed. At first glance, these results show that social efforts were not enough to control psychotropic drug use, thus indicating that other measures are needed, in addition to the restriction to and repression of illicit drug use. Alcohol and tobacco are still responsible for the major public health problems, and deserve priority attention from the government.

Colaboradores

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