

Religion and drug use by adolescents

Paulo Dalgalarrodo,^a Meire Aparecida Soldera,^a
Heleno Rodrigues Corrêa Filho^b e Cleide Aparecida M Silva^c

^aDepartamento de Psicologia Médica e Psiquiatria - FCM-UNICAMP

^bDepartamento de Medicina Preventiva e Social - FCM-UNICAMP

^cComissão de Pesquisa-FCM-UNICAMP

Abstract

Introduction Many international studies show that religion is an important dimension modulating the use of alcohol and drugs by adolescents.

Objectives: to determine which religious variables are associated to frequent or heavy use of alcohol, tobacco and drugs among adolescents in intermediate and high schools in Campinas, Brazil.

Methods: A cross-sectional study using a self-report anonymous questionnaire was administered to 2.287 students from a convenience sample of seven schools: five from central areas (two public and three private schools) and two public schools from the outskirts of the city, in 1998. The study analyzes data regarding the use of alcohol, tobacco, medicines, solvents, marijuana, cocaine and ecstasy. The religious variables included in the regression analysis were: religious affiliation, church attendance, self-assessed religiousness, and religious education in childhood. For the substances, nicotine, alcohol, marijuana, cocaine, ecstasy and "abuse of medicines" a logistic regression analysis for dicotomic answer was applied.

Results: The heavy use of at least one drug during the last month was more frequent among students that did not have a religious education during childhood. The use in the last month of cocaine, ecstasy and (abuse of) medicines was more frequent among those students that had no religion (cocaine and medicines) and that did not have a religious education during childhood (ecstasy and medicines).

Conclusions: this study is consistent with previous investigations demonstrating a strong influence of religious variables over the use of drugs among adolescents. Interesting, it was found that no or weaker religious education during childhood was markedly associated with significant more use of drugs during adolescence.

Keywords: Religion. Drug abuse. Teen Health. Alcoholic beverages.

Introduction

The relationship between religiousness and alcohol and drug use by adolescents has been subject of investigation by many researchers, as for adolescents both the religious involvement and practice as well as alcohol and drug use are very significant dimensions of their personal and social experience.¹ These dimensions have significant impact on the physical and mental health, on the risk behaviors and on the psychosocial development of adolescents.² Understanding the relationships between these two dimensions is a task of utmost importance.

Alcohol and drug use and dependence are a complex phenomenon determined by genetic, psychological and social factors.³ Many studies performed in different sociocultural contexts show that in adolescent and young populations there is an association between not having a religion affiliation (or pertaining to more liberal persuasions), having scarce religiousness, not attending to church or cults and higher alcohol and drug

use (Tables 1 and 2).

Therefore, international studies indicate an important effect of religious affiliation and different dimensions of religiousness associated with the modulation of alcohol and drug use in adolescents.

Religion and alcohol and drug use among adolescents in Brazil

In our country, the most comprehensive study including the subject religion and drug use among adolescents was performed in 1992.²⁴ This study included 16,117 elementary and high-school students from fifteen Brazilian cities and showed a weak but constant negative correlation between alcohol and drugs and attendance to religious activities. Youngsters who perform religious activities tended, therefore to a lower use of alcohol and drugs.

Borini et al.²⁵ (1994) studying 322 medical students in Marília,

Table 1 – Main studies in the US about the relation between religiousness/alcohol-drug use by students in the previous 15 years

AUTHOR (YEAR), PLACE	STUDIED GROUPS AND NUMBER OF SUBJECTS	MAIN RESULTS. COMMENTS
Monteiro et al., 1989 ⁴	704 college students (110 Jewish and 594 Christian)	Jewish students showed significantly less alcohol use than Christian students.
Clifford & Edmundson, 1989 ⁵	683 college students of the Southwest of the US.	Abstinent students or those who consumed little alcohol attended more to religious cults. Liberal Catholics showed more frequent poly alcohol and drug use.
Clark et al., 1992 ⁶	National survey with 2,036 medical students and 1,772 medical residents.	Medical students and residents who claimed not having religion had more involvement with drugs.
Carlucci et al., 1993 ⁷	331 college students of 3 campi of Eastern states	Being Catholic and male was associated to more alcohol-related problems.
Yarnold BM, 1996 ⁸	461 students of public high-schools of Florida.	When the religion was considered important for their lives they tended (not significantly) to not use heroine.
Patock-Peckham et al., 1998 ⁹	364 college students of Arizona (mean age of 20 years).	Intrinsic religiousness (introjected religious values and rules and ethical principles) was related, among Protestants, to a lower use of alcohol and to less alcohol-related problems.
Yarnold BM, 1998 ¹⁰	535 high-school students of public schools of Florida.	There was no association between religion, gender, race, school performance and extra-class activities and use of alcohol.
Poulson et. al., 1998 ¹¹	210 college students at the 'Bible-belt' states.	Girls (but not boys) with strong religious beliefs consumed less alcohol and had lower risk sexual behaviors.
Yarnold & Patterson, 1998 ¹²	458 high-school students of public schools of Florida.	Considering the religion as important for their lives was an important inhibitory factor for the use of cannabis.
Strote et al., 2002 ¹³	National survey with 14,000 college students at 119 universities.	The use of ecstasy was higher among students who considered the religion as less important for them.

São Paulo, verified that the prevalence of alcohol use (including mild, moderate and excessive drinkers) was significantly lower among Protestants (50%) compared to Catholics (75.2%), Spiritualists (75.0%) and Atheists (94.5%). They had also not detected in that sample excessive drinkers among Protestants and Spiritualists. With a substantially larger sample, the study by Queiroz²⁶ included 2,564 college students from 21 courses of the University of São Paulo – USP-, and used a logistic regression analysis. This study revealed a higher association of drug use with not having a religion.

More recently, Kerr-Corrêa et al.²⁷ (2002) accomplished a survey with 11,876 students (11,382 from college and 624 from high school) of the state of São Paulo. Using a logistic regression analysis, the authors identified that the excessive use of alcohol among high-school students was related to not having a religious practice. Among college students the use of cannabis was associated with not having any religion and the use of solvents was related to not having a religious practice. Analyzing the results as a whole, the authors concluded that alcohol and drug use is modulated by group rules, values and practices, both in family and in extra-family groups (friends, religious groups, etc).

The goal of this study was to verify how the variables related to religiousness, such as having or not a religion, religious affiliation, attendance to cults, high or low self-reported religiousness, and religious upbringing in childhood can influence the

frequent and/or heavy alcohol and drug use among adolescents.

Method

This is a cross-sectional study with an intentional, convenient sampling technique. In the year 1998, 2,287 elementary and high-school students of schools from different socioeconomic and cultural contexts were assessed: two peripheral public schools, two central public schools and three central private schools from Campinas-SP.

A self-reported anonymous questionnaire of CEBRID (Brazilian Information Center on Alcohol and Drugs) was used.²⁸ In this study we analyzed and commented the variables linked to religiousness. Other significant dimensions and variables found are discussed in other study.²⁹

Studied variables

The questionnaire employed collected data on the following variables: gender; age; socioeconomic level, school type; grade and period of the day in which the student studied, work; type of leisure; friends' and/or boy/girlfriends' understanding and support; person responsible for the rearing in the last two years; parental situation; with whom lives; family support and understanding; school delay; GHQ-12³⁰ and use of licit and illicit drugs. The GHQ-12 (General Health Questionnaire) is a screening instrument for mental disorders, which contains 12 ques-

Table 2 – Main international studies (excluding the US) regarding the relation between religion and religiousness and use of alcohol and drugs by students

AUTHOR (YEAR), PLACE	STUDIED GROUPS AND NUMBER OF SUBJECTS	MAIN RESULTS COMMENTS
Studies with college students		
Parfrey, 1976 ¹⁴ Ireland	458 college students	Higher use of alcohol among students with lower religious faith and lower attendance to cults.
Engs, 1980 ¹⁵ Australia (Brisbane)	1,691 college students.	Students who did not consider religion important used more alcohol, cannabis, tobacco and hallucinogens in comparison to those who considered religion important.
Engs et al., 1990 ¹⁶ Canada	4,911 students in comparison to a sample with 1,687 students in the US	Catholics and liberal Protestants had more alcohol-related problems than conservative Protestants and Jews. American students had more alcohol-related problems than Canadian ones.
Isralowitz & Ong., 1990 ¹⁷ Singapore	767 college students	Religious values and beliefs were not significant factors for the use of alcohol.
Luna et al, 1992 ¹⁸ Spain	955 college students	Students who deemed religion important used less alcohol and drugs and considered as dangerous the use of alcohol and drugs.
Cronin, 1995 ¹⁹ Germany	216 American students in a college in Munich	Alcohol and drugs consumption was significantly higher among high-school students who gave little importance to religion or to spirituality (but not among college students).
Ndom & Adelakan, 1996 ²⁰ Nigeria	Two surveys with college students: 1 ^o (1988) n=649 2 ^o (1993) n=859	Absence of religion was related to increased use of alcohol, tobacco and cannabis.
Studies with high-school students (not from college)		
Grube et. al., 1989 ²¹ Ireland	2.927 middle-school students	Middle-school students less intensely linked to a religion were more involved with tobacco, alcohol and drugs.
Singh & Mustapha, 1994 ²² Trinidad Tobago	1.603 high-school students	Four religious variables were clearly related to a significantly lower involvement with drugs: 1 Adhesion and participation in religious programs for youngsters; 2. Valuing the religious lessons; 3. Considering the importance of believing in God and 4. Considering praying important when difficulties arise.
McC Miller & Plant, 1996 ²³ England	7.722 students aged 15 to 16 years in a nation-wide representative sample	5.8% (416/7,217) of students claimed never having used alcohol and the main reason for that were their religious beliefs.

tions with the most common psychiatric symptoms in the community. Mari and Williams validated it for the Brazilian population in 1985.³⁰ Regarding religiousness, the following data were collected in this study: having or not a religion (being an adept of any religion or religious persuasion); religious affiliation; monthly attendance to church; self-reported religiousness (very much, moderately, hardly or not religious) and religious upbringing in childhood (very religious, moderately religious, hardly or not religious).

Studied drugs

The studied drugs were: alcohol, tobacco, medications, cannabis, solvents, cocaine and ecstasy. According to WHO,³¹ it was considered *use in the month*, the use of drugs in the 30 days prior to the study; *frequent use*, the use 6 to 19 times in the 30 days prior to the study and *heavy use*, the use in 20 days or more in the 30 days prior to the study.

For widely-used substances such as tobacco, alcohol, cannabis and solvents, individual multivariate analyses were performed for each of them, considering heavy use. For cocaine, ‘medica-

tions to get high’ and ecstasy, as the frequency of use was quite lower in our sample, we chose to work with ‘use in the month’.

As the concomitant use of several drugs was very common (polyuse) and aiming to compare students who had not used any drug in the month and students who used heavily at least one drug, it was created a variable called DRUG. This variable assumes the value 0, if students *had not used in the month any of the mentioned drugs*; and 1, if *they used at least one of the studied drugs in 20 days or more in the previous month*.

Statistical analysis

The variables related to religiousness were: having or not any religion, religious affiliation, time in which subjects pertain to the religious persuasion, monthly attendance to church, self-reported religiousness; and religious upbringing in childhood. In order to identify how the variables of religiousness influence the heavy use of any drug (alcohol, tobacco, cannabis, solvents, cocaine, ecstasy and ‘medications to get high’ it was used a multivariate analysis procedure (which considers variables as a whole); the Logistic Regression Analysis for Dicotomic Answer.

Table 3 – Religious variables versus gender, age, schooling grade, and type of school

	GENDER Male / Female n (%) / n (%)	AGE Mean (DP)	GRADE Elementary School/ High School n (%) / n (%)	TYPE OF SCHOOL Peripheral Publ. / Central Publ. / Private n (%) / n (%) / n (%)
Having a Religion	p<.0001	p=.10	p=0.77	p=.37
Yes	957 (81.0) / 961 (88.3)	15.7 (2.7)	972 (84.3) / 945 (84.8)	629 (83.1) / 662 (85.0) / 630 (85.6)
No	224 (19.0) / 127 (11.7)	16.0 (2.6)	181 (15.7) / 170 (15.3)	128 (16.9) / 117 (15.0) / 106 (14.4)
Religious Affiliation	p=.14	p=.06	p<.001	p<.0001
Catholic	748 (77.4) / 700 (72.5)	15.7 (2.7)	737 (74.7) / 707 (75.0)	457 (71.3) / 529 (79.9) / 464 (73.3)
Historical Protestant	17 (1.8) / 18 (1.9)	14.5 (2.1)	28 (2.8) / 7 (.7)	24 (3.7) / 5 (0.8) / 6 (1.0)
Pentecostal	144 (14.9) / 169 (17.5)	15.9 (2.8)	141 (14.3) / 172 (18.2)	141 (22.0) / 78 (11.8) / 94 (14.9)
Protestant	44 (4.6) / 62 (6.4)	15.4 (2.4)	63 (6.4) / 44 (4.7)	7 (1.0) / 40 (6.0) / 60 (9.5)
Spiritualist/Others	14 (1.5) / 17 (1.8)	15.7 (3.6)	18 (1.8) / 13 (1.4)	12 (1.9) / 10 (1.5) / 9 (1.4)
Attendance to Cults	p=.62	p=.19	p=.08	p=.04
>=4 x per month	693 (69.2) / 664 (70.2)	15.6 (2.7)	731 (71.4) / 624 (67.8)	503 (73.0) / 435 (68.8) / 420 (66.7)
<4 x per month	309 (30.8) / 282 (29.8)	15.8 (2.7)	293 (28.6) / 297 (32.3)	186 (27.0) / 197 (31.2) / 210 (33.3)
Religious Belief	p<.0001	p=.06	p=.34	p<.0001
Very religious	210 (18.0) / 279 (25.7)	16.0 (2.9)	223 (20.4) / 255 (23.0)	213 (28.2) / 136 (17.6) / 140 (19.2)
Moderately religious	510 (43.7) / 574 (52.9)	15.7 (2.7)	553 (48.3) / 531 (48.0)	315 (41.7) / 402 (52.0) / 369 (50.7)
Hardly religious	363 (31.1) / 205 (18.9)	15.7 (2.6)	303 (26.5) / 265 (23.9)	198 (26.2) / 199 (25.7) / 172 (23.6)
Non-religious	84(7.2) / 28(2.6)	16.2(2.6)	56(4.9) / 56(5.0)	29 (3.8) / 36 (4.7) / 47 (6.5)
R.U.C.	p<.001	p=.35	p=.14	p<.0001
Very religious	312 (26.6) / 328 (31.0)	15.7 (2.8)	388 (29.6) / 300 (26.9)	265 (35.0) / 195 (25.3) / 180 (24.6)
Religious	465 (39.7) / 483 (44.4)	15.7 (2.7)	466 (40.8) / 483 (43.3)	279 (36.9) / 334 (43.3) / 337 (46.0)
Hardly religious	304 (26.0) / 224 (20.6)	15.9 (2.6)	257 (22.5) / 271 (24.3)	160 (21.1) / 195 (25.3) / 174 (23.7)
Non-religious	90 (8.0) / 52 (4.8)	15.9 (2.8)	81 (7.1) / 61 (5.5)	53 (7.0) / 47 (6.1) / 42 (5.7)

Statistical tests: Chi-square, ANOVA and Student t test . RUC – Religious Upbringing in Childhood.

The selection method of explicative variables used in the logistic regression was stepwise. Statistical tests used were: chi-square, for differences in frequency, ANOVA for the comparison of two or more means and Student t test for two means.

Ethical aspects

The Ethical Committee of the School of Medical Sciences of the State University of Campinas – UNICAMP – approved this study and the informed consent was obtained from the Official Education Agencies, from the Principals and the Parents’ Associations of the involved schools.

Before the application of the questionnaire, students were explicitly told that they had the full right of not participating in the study and that this refusal would not imply any form of disapproval or reprehension. The application was collective, at schoolroom, without the presence of the teacher. Assurance and certainty of anonymity was emphasized at the beginning of the interviews.

Results

General aspects of the sample

The initial sample had 2,375 students. Of these, 86 students aged above 26 years were excluded (despite studying in elemen-

tary or high schools). Two questionnaires were discarded for their incomplete filling or lack of understanding. There were no refusals to answer. It was not possible to quantify the exact number of absent students, but according to the application reports it is estimated that they were not numerous as the great majority of schoolrooms were full at the moment of the interview. Therefore, 2,287 students were included for the study’s analysis. Of these, 1,188 (52.0%) were males and 1,096 (48.0%) were females. Mean age was 15.8 (Standard Deviation 2.7; variation 11-26); 781 (34.1%) studied in central public schools, 763 (33.6%), in peripheral public schools and 738 (32.3%) studied in central private schools; 1,159 (50.8%) coursed elementary school and 1,122 (49.2%) coursed high school.

The results of the bivariate analysis (which crosses two variables) are shown in Tables 3 and 4. In Table 5 the results of the multivariate analysis are shown.

Multivariate analysis (Table 5)

In the multivariate analysis model employed, we could not identify a statistically significant relation between specific heavy use of tobacco, alcohol, solvents and cannabis and va-

Table 4 – Religious variables and heavy use of drugs, school delay and scores in the General Health Questionnaire(GHQ-12)

	HEAVY USE OF DRUG Yes / No n (%) / n (%)	YEARS OF SCHOOL DELAY Mean (± SD) / Median	GHQ12 Mean (± SD)
Having a religion	p<.001	P=.09	P=.11
Yes	91 (74.0) / 1.414 (86.1)	5.4 (4.9) / 6.0	.7 (1.4)
No	32 (26.0) / 228 (13.9)	5.6 (4.8) / 4.0	.9 (1.7)
Religious Affiliation	P=.03	p<0.01*	P=.04
Catholic (n=1.518)	78 (83.9) / 1067 (74.2)	4.5 (4.6) / 6.0	0.7 (1.4)
Historical Protestant (n=35)	1 (1.1) / 29 (2.0)	2.7 (3.7) / 1.0	1.0 (1.9)
Pentecostal Protestant (n=313)	6 (6.5) / 237 (16.6)	5.9 (4.9) / 8.0	1.0 (1.3)
Spiritualist (n=106)	8 (8.6) / 74 (5.2)	4.5 (4.6) / 3.0	1.0 (1.9)
Others (n=31)	0 (0) / 23 (1.6)	5.1 (5.9) / 2.0	1.0 (2.2)
Attendance to Cults	P=.78	P=.53	P=.40
>=4	68 (67.3) / 976 (68.7)	5.2 (4.8) / 3.0	.7 (1.5)
<4	33 (32.7) / 445 (31.2)	5.4(4.8) / 7.0	.7 (1.5)
Religious Belief	p<0.0001	P=.06	p<.01**
Very religious	16 (13.2) / 369 (22.7)	5.9 (5.0) / 8.0	.7 (1.4)
Moderately religious	41 (33.9) / 829 (50.9)	5.3 (4.9) / 6.0	.6 (1.4)
Hardly religious	47 (38.8) / 372 (22.8)	5.3(4.8) / 4.0	.8(1.5)
Not religious	17 (14.1) / 59 (3.6)	6.0 (4.7) / 7.0	1.2 (2.1)
Religious Upbringing in Childhood	p<.001	P=.49	p<.01***
Very religious	28 (22.8) / 484 (29.5)	5.3 (4.9) / 4.0	.8 (1.6)
Religious	44 (35.8) / 702 (42.8)	5.5 (4.8) / 7.0	.6 (1.3)
Hardly religious	35 (28.5) / 365 (22.2)	5.7 (4.9) / 8.0	.7 (1.4)
Non-religious	16 (13.0) / 91 (5.5)	5.2 (4.9) / 3.0	1.0 (1.8)

Tests: chi-square for the differences on frequencies, ANOVA for the comparison of more than two means and Student's t test for two means * Statistically significant difference between Historical Protestant and Pentecostal Protestant and between Catholic and Historical Protestant. ** Statistically significant difference between considering oneself non-religious and moderately religious. ***. Statistically significant difference between non-religious and religious childhood upbringing.

riables of religiousness. For cocaine, 'medications' and ecstasy (with which we have only worked with use in the month) the significant values found are shown in table 3. In the same table the significant results for the variable created *a posteriori* called 'DRUG' are also displayed.

Discussion

The data from the current study reinforce clearly the evidence demonstrated by the international and national literature, namely: several dimensions of religiousness are possibly relevant in the modulation of use and abuse of alcohol and drugs by several population groups, particularly adolescents and youngsters.

Limitations of the study

Some methodological limitations of this study are worth to be mentioned. As this is a convenient sample, we intentionally chose public and private schools from central and peripheral neighborhoods, in order to contrast the socioeconomic and cultural reality of the students. Therefore, this was not a representative sample from all students of Campinas. Thus, possible generalizations from the data could only be performed very cautiously.

In a relatively surprising way, we had no refusals from students to answer the questionnaires at schoolrooms, what can be possibly due to the extremely skilful explanation of this

study's objectives to the students and to the emphatic assurance of anonymity. On the other hand, it was not possible to control the bias produced by absent students, in the day of the interview. Actually, these students are possibly the most severely involved in the use of alcohol and drugs. However, this is a limitation of any study performed at schools. Anyway, interviewers observed that in the days of application the classes were, as a rule, full, indicating that the number of absent students was possibly small.

Finally a criticism can be made as we have included tobacco with alcohol and other drugs in the construct 'DRUG' (heavy use of any drug in the last month). In general, tobacco use tends to be daily, configuring almost always a 'heavy use'. This use surely does not necessarily imply severe behavioral and psychosocial alterations (as is the case of heavy use of alcohol, cannabis or cocaine). However, we have chosen to keep tobacco in the set of heavily used drugs, as this use implies severe risks to the adolescent's physical health.

It is not superfluous to remind here that as this is an observational and cross-sectional study, we have not identified causal relationships (such as higher religiousness producing lower drug use), but only descriptive associations, whose causal factors may reside in points not identified by researchers.

Religiousness in the studied sample

In our sample, the analysis of the relationship of religiousness

with the socio-demographic profile of students and type of school found that girls claimed more having a religion and having had a religious upbringing as well as a higher self-reported religiousness than boys. A higher religiousness among females is a very recurrent finding in several cultures (including Western ones), which has been relatively well documented in the sociological literature.³² There were no differences regarding the variables of religiousness and age. Students of peripheral public schools tend to be more affiliate to historical Protestantism or Pentecostalism and less frequently to Spiritualism, as well as having a higher self-reported religiousness, having a higher attendance to religious cults, and having had more frequently a very religious upbringing in childhood. Summing up, girls and boys from peripheral public schools are most intensely religious.

Variables of religiousness

As a rule, many are the variables related to religion assessed in studies about alcohol and drug use among adolescents. Most part of the studies has predominantly investigated the religious affiliation and the attendance to cults. However, several researchers^{9,17,22,33} have also included variables such as: importance given to religiousness in life, religious commitment, measures of religiousness (belief in God, intensity of the faith, etc.), personal religious practices (solitary prays, religious

readings, etc.), participation in activities in church, besides cults, time spent with religious activities and orthodox or fundamentalist beliefs and values. Therefore, it is difficult to compare the studies and even to identify which dimension of religious experience is the most significant for the modulation of alcohol and drug use. In this study, we dealt with only four dimensions: religious affiliation, attendance to cults and a general self-reported measure regarding religiousness, implied in considering oneself (in several degrees) a religious person. Besides, we have included the religious upbringing in childhood, as this would indicate the influence of the family religiousness over the adolescent.

Among the religious persuasions in our society, historical Protestants and Pentecostals showed, relatively, a higher frequency of non-users and Catholics and Spiritualists, a higher frequency (also relative) of heavy users. This is in accordance with the literature,^{3,4,16,25} in which it is verified that the most conservative religious persuasions tend to present less alcohol and drug users among their members.

Generally, in the bivariate analysis it was verified that all religious variables, except for 'attendance to cults', were significantly associated with heavy drug use. Such an association occurred always in the sense of - *the more religious is the student subgroup the lower the frequency of heavy drug use.*

The absence of relationship between attendance to cults and

Table 5 – Multivariate Dicotomic Logistic Regression Estimations (MDLRE) for the use of different drugs

USE OF COCAINE AT LEAST ONCE IN THE 30 DAYS PRIOR TO THE INTERVIEW VERSUS NO USE OF COCAINE (FINAL MODEL)			
Variable	ODDS	CI (95%)	p value
Religiousness (having x not having a religious belief)	2.930	1.750 – 4.905	.0001
USE OF ECSTASY AT LEAST ONCE IN THE 30 DAYS PRIOR TO THE INTERVIEW VERSUS NO USE OF ECSTASY (FINAL MODEL)			
Variable	ODDS	CI (95%)	p value
Religious upbringing in childhood (had such upbringing)			
Religious x very religious	.293	0.099 - 0.865	.026
Hardly religious x very religious	1.273	0.524 - 2.987	.579
Without religious belief x very religious	4.194	1.653 - 10.645	.002
USE OF A MEDICATION TO 'GET HIGH' AT LEAST ONCE IN THE 30 DAYS PRIOR TO THE INTERVIEW VERSUS NO USE OF MEDICATIONS TO 'GET HIGH' (FINAL MODEL)			
Variable	ODDS	CI (95%)	p value
Religiousness (does not have any x was religious)	2.214	1.183 - 4.142	.013
Religious upbringing on childhood (had a religious upbringing)			
Religious x very religious	0.454	0.1729 - 1.197	.110
Hardly religious x very religious	2.497	1.174 - 5.309	.017
Without a religion x very religious	3.150	1.226 - 8.096	.017
HEAVY USE OF ANY DRUG (AT LEAST ONCE 20 OR MORE TIMES IN THE 30 DAYS PRIOR TO THE INTERVIEW) VERSUS NO USE OF ANY DRUG IN THE MONTH			
Variable	ODDS	CI (95%)	p value
Religious upbringing on childhood (had a religious upbringing)			
Religious x very religious	1.067	.780 - 1.460	.684
Hardly religious x very religious	1.677	1.175 - 2.392	.004
Without a religion x very religious	1.401	.824 - 2.382	.213

NOTE: Odds ratio in this table is corrected for other significant variables. The other variables which entered in the final model were: for use of cocaine: private school; for use of ecstasy: private school and higher school delay; for use of medication to 'aet hiah': private school. For heavv use of anv druca: private

drug use in our sample is noteworthy, as most studies have identified that the more adolescents attend to cults or Masses, the less they use alcohol or drugs (review by Francis³³). However, some studies^{33,34} could not, like us, find this relationship.

Of the four studied variables, the most recurrent one in the multivariate analysis, associated with a possible inhibitory effect on alcohol and drug use, was 'having had a religious or very religious upbringing in childhood'.

It must be also highlighted that both 'not having a religious upbringing in childhood', and self-reported religiousness, were the characteristics which were related to a higher punctuation in the GHQ-12, which indicates the presence of psychopathological symptoms. Although the absolute difference in the punctuation is small, it may be speculated that adolescents with less religious upbringing and less current personal religiousness tend to be also those who feel psychologically worse.

In this study, in the multivariate analysis, it was noteworthy that the variable 'having had a religious upbringing in childhood' was the one that more recurrently was related to lower use in the month as well as to lower heavy use of the different drugs. Such finding is intriguing, as between these two phenomena (drug use in adolescence and religious upbringing in childhood) there is a considerable temporal distance.

Actually, there are many possible implications of claiming 'having had a religious upbringing in childhood'. Initially, it was found that the definition of what is exactly a 'religious upbringing' is complex and relatively vague. Boys³⁵, reviewing the subject 'religious education', states that the several concepts and notions implied denote a considerable conceptual and empirical confusion.

In our study, having had a religious upbringing in childhood may imply having had an education with more clear moral and behavioral rules and norms, having had a more structured socio-familial environment, as well as having internalized values which give significance to life. Available data, however, do not allow such details, obliging us to have a position of interpretative caution. Jessor and Jessor³⁶ have not found a relationship between the degree of parental religious fundamentalism and the use of alcohol by children. On the other hand, an important recently published study,³⁷ had investigated data related to education, religiousness and moral attitudes among 16,604 subjects in 15 countries. The authors could identify that the moral attitudes of an individual reared by religious parents is clearly more 'conservative' than that of those reared by non-religious parents. They also verified that the effects of socialization in childhood with religious parents are kept during adulthood. Finally, they verified that the influence of religiousness on moral attitudes is more intense in less secular countries. According to the authors, in countries in which religiousness was, as a rule, more important in social life, the individual and parental religiousness tended to more remarkably guide the moral attitudes and behavioral patterns of subjects.

In general, data from the current study (higher influence of 'religious upbringing', 'self-reported religiousness' and less influence of 'attendance to cults') indicate that dimensions of religiousness related to the internalization of moral and reli-

gious rules, values and attitudes were more important than a possible religious social practice, such as the attendance to cults and Masses.

This finding is corroborated by two studies^{9,38} which point to the same direction. Patocvk-Peckham et al.,⁹ verified that, among 263 college students, intrinsic religiousness (religious values and rules, as well as introjected personal ethical rules, utilized in daily life) was associated to lower alcohol use and less alcohol-related problems, whereas the so-called extrinsic religiousness (related to the utilitarian seek of safety, sociability, status and self-justification in church) was not related to alcohol use.

In the same sense, Laflin et al.,³⁸ while studying variables such as drug use, attitudes regarding drugs, subjective rules and self-esteem among 2,074 high-school and college students in the US, have identified that subjective rules and attitudes regarding the use of drugs were more important than the current self-esteem of the student to determine alcohol and drug use. These authors, based on the theories of 'planned action' and 'rationalized action', sustain that subjective rules and internalized attitudes regarding drug use are the factors most strongly associated with the use or not of drugs among adolescents. Subjective rules which orient attitudes are much more 'introjected dimensions' of religiousness than the external social practices of attendance to cults.

Also supporting this interpretation, data from this study, as well as from other studies^{16,39} reveal that groups of Protestant students pertaining to the more conservative persuasions use significantly less alcohol and drugs than the others. These groups (in the US, conservative Protestants and in Brazil, historical Protestants and Pentecostals) condemn the use of alcohol and drugs more clearly and explicitly than more liberal groups (in the US, liberal protestants and Catholics, and in Brazil, Catholics and Spiritualists), among which the condemnation is not so emphasized. Bock et al.,⁴⁰ when analyzing data from the US census from 1972 to 1980 for non-institutionalized people aged above 18 years, verified that the inhibitory impact of religion on alcohol use and abuse is progressively higher in those religious groups which explicitly condemn this use. In this line, two recent studies^{41,42} identified, in extensive samples and with strict epidemiological methods, the association of pertaining to conservative religious groups, as well as having a higher personal religious devotion and less frequent use and less dependence on alcohol and other drugs.

Therefore, our results, as well as the mentioned studies, point to a possible higher influence of internalized religiousness, with rules, values and prohibitions inserted in the adolescent's subjectivity, a dimension which is possibly more important than simply attending to a determined religious persuasion. Further studies should investigate more deeply this possibility.

As a conclusion, we would like to remind that the adhesion to a religious persuasion and being involved with patterns of religiousness, signify the adhesion to a set of social values, symbols, behaviors and practices, i.e., the adhesion to a comprehensive and complex religious ethos, which includes, among other things, the acceptance or refusal of alcohol and drugs.

References

1. Amoateng AY, Bahr SJ. Religion, family, and adolescent drug use. *Sociol. Perspect.* 29(1):53-76.
2. Baumrind D, Moselle KA. A developmental perspective on adolescent drug abuse. *Adv. Alcohol Substance Abuse* 4(3/4):41-67.
3. Prendergast ML. Substance use and abuse among college students: a review of recent literature. *J Am Coll Health* 1994;43(3):99-113.
4. Monteiro MG, Schuckit MA. Alcohol, drug and mental health problems among Jewish and Christian men at a university. *Am J Alcohol Abuse* 1989;15(4):403-12.
5. Clifford PR, Edmundson E, Koch WR, Dodd BG. Discerning the epidemiology of drug use among a sample of college students. *J Drug Educ* 1989;19(3):209-23.
6. Clark DC, Daugherty SR, Baldwin DC, Hughes PH, Storr CI, Hedeker D. Assessment of drug involvement: applications to a sample of physicians in training. *Br J Addict* 1992;87(12):1649-62.
7. Carlucci K, Genova J, Rubackin F, Kayson WA. Effects of sex, religion and amount of alcohol consumption on self-reported drinking-related problem behaviors. *Psychol Rep* 1993;72:983-7.
8. Yarnold BM. Heroin use among Miami's public school students, 1992: peers and the "drug subculture" overwhelm parents, religion and schools. *J Health Soc Policy* 1996;7(4):45-59.
9. Patock-Peckham JA, Hutchinson GT, Cheong J, Nagoshi CT. Effect of religion and religiosity on alcohol use in a college student sample. *Drug Alcohol Depend* 1998;49(2):81-8.
10. Yarnold BM. The use of alcohol by Miami's adolescent public school students 1992: peers, risk-taking and availability as central forces. *J. Drug Educ* 1998;28(3):211-33.
11. Poulson RL, Eppler MA, Satterwhite TN, Wuensch KL, Bass LA. Alcohol consumption, strength of religious beliefs and risky sexual behaviour in college students. *J Am Coll Health* 1998;46(5):227-32.
12. Yarnold BM, Patterson V. Marijuana use among Miami's adolescents 1992. *J Health Soc Policy* 1998;10(1):65-79.
13. Strote J, Lee JE, Wechsler H. Increasing MDMA use among college students: results of a national survey. *J Adolesc Health* 2002;30(1):64-72.
14. Parfrey PS. The effect of religious factors on intoxicant use. *Scand J Soc Med* 1976;4(3):135-40.
15. Engs RC. The drug-use patterns of helping-profession students in Brisbane, Australia. *Drug Alcohol Depend* 1980;6(4):231-46.
16. Engs RC, Hanson DJ, Gliksmann L, Smythe C. Influence of religion and culture on drinking behaviours: a test of hypotheses between Canada and USA. *Br J Addict* 1990;85(11):1475-82.
17. Isralowitz RE, Ong TH. Religion values and beliefs and place of residence as predictors of alcohol use among Chinese college students in Singapore. *Int J Addict* 1990;25(5):515-29.
18. Luna A, Osuna E, Zurera L, Garcia-Pastor MV, Castillo del Toro L. The relationship between the perception of alcohol and drug harmfulness and alcohol consumption by university students. *Med Law* 1992;11:3-10.
19. Cronin C. Religiosity, religious affiliation and alcohol and drug use among American college students living in Germany. *Int J Addict* 1995;30(2):231-8.
20. Ndom RJE, Adelekan ML. Psychosocial correlates of substance use among undergraduates in Ilorin University, Nigeria. *East African Medical Journal* 1996;73(8):541-7.
21. Grube JW, Morgan M, Kearney KA. Using self-generated identification codes to match questionnaires in panel studies of adolescent substance use. *Addict Behav* 1989;14(2):159-71.
22. Singh H, Mustapha N. Some factors associated with substance abuse among secondary school students in Trinidad and Tobago. *J. Drug Education* 1994;24(1):83-93.
23. McC Miller P, Plant M. Drinking, smoking and illicit drug use among 15 and 16 years olds in the United Kingdom. *British Medical Journal* 1996; 313(17):394-7.
24. Carvalho V, Cotrim BC. Atividades extra-curriculares e prevenção ao abuso de drogas: uma questão polêmica. *Rev de Saúde Públ* 1992;26(3):145-9.
25. Borini P, Oliveira CM, Martins MG, Guimarães RC. Padrão de uso de bebidas alcoólicas de estudantes de medicina. *J Bras Psiquiatr* 1994;43(2):93-103.
26. Queiroz S. Fatores relacionados ao uso de drogas e condições de risco entre alunos de graduação da Universidade de São Paulo. São Paulo; 2000. [Tese de Doutorado. Universidade de São Paulo].
27. Kerr-Corrêa F, Simão MO, Dalben I, et al. Possíveis fatores de risco para o uso de álcool e drogas em estudantes universitários e colegiais da UNESP. *J Bras Dep Quím* 2002;3(1):32-41.
28. Carlini-Cotrim B, Barbosa MTS. Pesquisas epidemiológicas sobre o uso de drogas entre estudantes: um manual de orientações gerais. São Paulo: Centro Brasileiro de Informações Sobre Drogas Psicotrópicas - Departamento de Psicobiologia da Escola Paulista de Medicina; 1993.
29. Soldera MA, Dalgalarondo P, Corrêa Filho HR, Silva CAM. Uso pesado de drogas por estudantes de escolas periféricas e centrais em Campinas-SP: Prevalência e fatores sociais associados. *Revista de Saúde Pública* 2004;38:2 (no prelo).
30. Mari JJ, Williams P. A comparison of the validity of two psychiatric screening questionnaires (GHQ-12 and SHQ-20) in Brazil, using Relative Operating Characteristic (ROC) analysis. *Psychol Med* 15:651-9.
31. OMS (Organização Mundial da Saúde) - WHO-World Health Organization Nomenclature and classification of drug and alcohol-related problems: a WHO, Memorandum. *Bulletin of the World Health Organization* 1981;59(2):225-45.
32. Miller AS, Stark R. Gender and religiousness: Can socialization explanations be saved? *American Journal of Sociology* 2002;107(6):1399-423.
33. Francis LJ. Attitude toward alcohol, church attendance and denomination. *Drug and Alcohol Dependence* 1992;31:45-50.
34. Margulies RZ, Kessler RC, Kandel DB. A longitudinal study of onset of drinking among high-school students. *J Stud Alcohol* 1977;38:897-912.
35. Boys MC. The stand point of religious education. *Religious Education* 1981;76(2):128-41.
36. Jessor R, Jessor SL. Problem behavior and psychological developments: A longitudinal study of youth. New York: Academic Press; 1977.
37. Scheepers P, Grotenhuis MT, Van der Slik F. Education, religiosity and moral attitudes: Explaining cross-national effect differences. *Sociology of Religion* 2002;63(2):157-76.
38. Laflin MT, Moore-Hirschl S, Weis DL, Hayes BE. Use of the theory of reasoned action to predict drug and alcohol use. *Int J Addict* 1994;29(7):927-40.
39. Schlegel RP, Sanborn MD. Religious affiliation and adolescent drinking. *Journal of Studies on Alcohol* 1979;40(7):693-703.
40. Bock EW, Cochran JK, Beeghley L. Moral messages: the relative influence of denomination on the religiosity-alcohol relationship. *The Sociological Quarterly* 1987;28 (1):89-103.
41. Miller L, Davies M, Greenwald S. Religiosity and substance use and abuse among adolescents in the National Comorbidity Survey. *J Am Acad Child Adolesc Psychiatry* 2000;39(9):1190-7.
42. Kendler KS, Liu X, Gardner CO, McCullough ME, Larson D, Prescott CA. Dimensions of religiosity and their relationship to lifetime psychi-

atric and substance use disorders. Am J Psychiatry 2003;160(3):496-503.

Correspondence

Paulo Dalgarrondo

CP 6111

CEP 13081970

Phone: (19) 3788-7206 Fax: (19) 3289-4819

E-mail: psi@head.fcm.unicamp.br
