








# Educational intervention and positive expectancies about the alcohol use among students

*Intervenção educativa e expectativas positivas sobre o uso do álcool entre estudantes*

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## ABSTRACT

It aimed to evaluate the positive expectancies about the recent alcohol use by elementary and high school students before and after an educational intervention and verify differences in the frequency of use and in the information about this substance, according to sex. A quasi-experimental study, carried out with 231 students. We made use of: Sociodemographic form; Drug Use Screening Inventory; Alcohol Expectancies Scale, applied 60 days before and after the intervention. We used descriptive and inferential statistical analyses. The hypothesis of the study was not confirmed. In general group, no significant changes were seen about the alcohol after the intervention. The consumption frequency remained high after the activity, with emphasis for the female gender. The results have shown that the educational intervention was ineffective to influence changes of the alcohol use, however, it was effective for the acquisition of information about the substance.

**Descriptors:** Alcoholic Beverages; Adolescent behavior; Sex; Health Promotion; Evaluation of the Efficacy-Effectiveness of Interventions.

## RESUMO

Objetivou-se avaliar as expectativas positivas sobre o uso recente de álcool por estudantes de ensino Fundamental e Médio antes e após uma intervenção educativa e verificar diferenças na frequência de uso e nas informações sobre essa substância, segundo o sexo. Estudo quase-experimental, realizado com 231 estudantes. Foram utilizados: Formulário sociodemográfico; Inventário de Triagem do Uso de Drogas; Escala de Expectativas Positivas acerca do Álcool, aplicados antes e após 60 dias da intervenção. Foram realizadas análises estatísticas descritivas e inferenciais. A hipótese do estudo não foi confirmada. Para o grupo geral, não foram observadas mudanças significativas nas expectativas positivas sobre o álcool após a intervenção. A frequência de consumo se manteve elevada após a atividade, com destaque para o sexo feminino. Os resultados demonstraram que a intervenção educativa não foi efetiva para influenciar mudanças do uso do álcool, todavia, foi eficaz para a aquisição de informações sobre a substância.

**Descritores:** Bebidas Alcoólicas; Comportamento do Adolescente; Sexo; Promoção da Saúde; Avaliação de Eficácia-Efetividade de Intervenções.

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## INTRODUCTION

The abusive use of alcohol is a severe public health problem, since it is related to high morbidity and mortality rates<sup>(1)</sup>.

This concern regarding the alcohol consumption is growing and perceived throughout the world. The prevalence of alcohol consumption and high-risk beverages has increased in 12 months (2001–2002 and 2012–2013) in the population of the United States<sup>(2)</sup>. The II National Survey on Alcohol and Drugs (LENAD) in the Brazilian population revealed that half of Brazilian people make use of alcohol<sup>(3)</sup>. The National Adolescent School-based Health Survey (PeNSE) revealed that 55.5% of students of the elementary school have already used alcohol, being this experimentation more common for those linked to public network schools (56.2%)<sup>(4)</sup>.

With regard to differentiation by gender, it is known that neurobiological factors possibly influence differences in the excessive alcohol consumption in a single occasion (Binge Drink – BD) and in the comorbidities that can arise<sup>(5)</sup>. Comparatively, the girls are ingesting alcohol in similar proportions, but greater, if compared to boys<sup>(4)</sup>, besides presenting an earlier consumption. It is worth highlighting that the women experience more vulnerability with regard to the biopsychosocial negative effects and consequences of the alcohol consumption<sup>(5)</sup>.

In this scope, the programs for the prevention of psychoactive substances consumption in schools have been evaluated from the teachers', managers' and students' view<sup>(6)</sup>, including the expectancies evaluation, which consists in the ability to establish associations between mental representations into long-term memory and situations that can be automatically activated under certain conditions. For this reason, interventions targeted to expectancies have been used to reduce the alcohol consumption<sup>(7)</sup>.

In Brazil, however, such type of evaluation has been little explored, and even less to verify differences among genders. Despite this, evaluating expectancies can be useful to verify the impact of the predisposition for the alcohol use<sup>(8,9)</sup>. Considering the diversity aimed at the prevention of the alcohol use, the ludic activities, which are dynamical health promotion actions, are really suitable to be disseminated at school<sup>(10)</sup>, for treating to a sophistication environment<sup>(11)</sup>. They may, still, in line with the harm reduction strategies, due to considering the problem of the substances consumption in the health field and offering an approach targeted to the prevention of problems related to drugs use<sup>(12)</sup>.

Therefore, the hypothesis of this study is that the educative intervention about the alcohol use change the recent consumption and expectancies in face of this substance use, and that this difference be evident among the genders.

Its objective is to evaluate the positive expectancies about the recent alcohol use by adolescents, before and after their participation in an educative intervention. Beyond this, to

verify whether there are differences among the genders in the information about the alcoholic beverage, after the intervention.

## METHODS

This is a quasi-experimental study, which evaluated the outcome variable before and after an intervention. Quasi-experimental studies of different designs have been described to infer the estimated effect of an intervention. In the case of this study, the option for the outlining “before and after” was chosen, since in the health area it is interesting that the natural context of the investigation is not changed much, but at the same time a strong evidence of cause-effect relationship is generated between the dependent and independent variables<sup>(13)</sup>.

The sample was probabilistic. The data were collected in a state high and elementary school, situated in a municipality in the interior of the State of São Paulo, Brazil, in the period from July to December 2016. The inclusion criteria were: be a student regularly enrolled in series of grades of Elementary II and High School of the morning and evening periods; participate of at least 75% of the activities proposed in the scope of the educative intervention; both sexes. Exclusion Criteria: not willing to participate in the education intervention. Information about population and sample are shown in Figure 1.

The data collect occurred in the computer room, where the students replied to an on line form, with the authorization from the direction of the school. As the design of this study involved two moments of data collections, it was necessary to carry out the participants pairing for the data analysis. Then, each participant received a randomized number of participation in the research, delivered at the first moment and the same number was used after the intervention, aiming at to preserve its anonymity.

A pre-test assessment about the positive expectancies on the alcohol use (dependent variables) was applied among the students. Newt, an educative intervention (independent variable) about the theme “use and abuse of alcohol among adolescents” was elaborated and implemented and, after 60 days, a new assessment of the same variables was carried out. The aim of this intervention was to improve the information and level of knowledge about the consequences associated with the alcohol use in the adolescence, that is, it sought to investigate eventual differences in the positive expectancies about the consumption of this substance after the intervention.

The instruments used were previously evaluated in a pilot-study, of which 48 students participated, who were excluded from the investigated sample. The evaluation, however, indicated the need to do small Portuguese corrections (replacement of words by synonyms) in order to improve the understanding about the questionnaires.

The final questionnaire consisted of sociodemographic data (age, gender, religion, school level of the participant, and whether it has already participated previously in an intervention in the school, with emphasis on the prevention of the alcohol use), in addition to investigation of the alcohol use in the last 30 days extracted from the first domain of the Drug Use Screening Inventory (DUSI), originally developed in the United States and adapted and validated for use in Brazil. This instrument is used as a tool of screening and in it questions that address problems associated with the substances use, divided into 10 areas are investigated<sup>(15)</sup>. Scale of Positive Alcohol Expectancies (EEPA-A), which is a Portuguese scale adapted transculturally for the Brazil in the scope of this study, derived from the Alcohol Expectancy Questionnaire — Adolescent Form (AEQ-A), consists of 49 items, with likert-type answers (I Totally Disagree: 1; I Disagree: 2; I Don't Know: 3; I Agree: 4; I Totally Agree: 5)<sup>(7)</sup>.

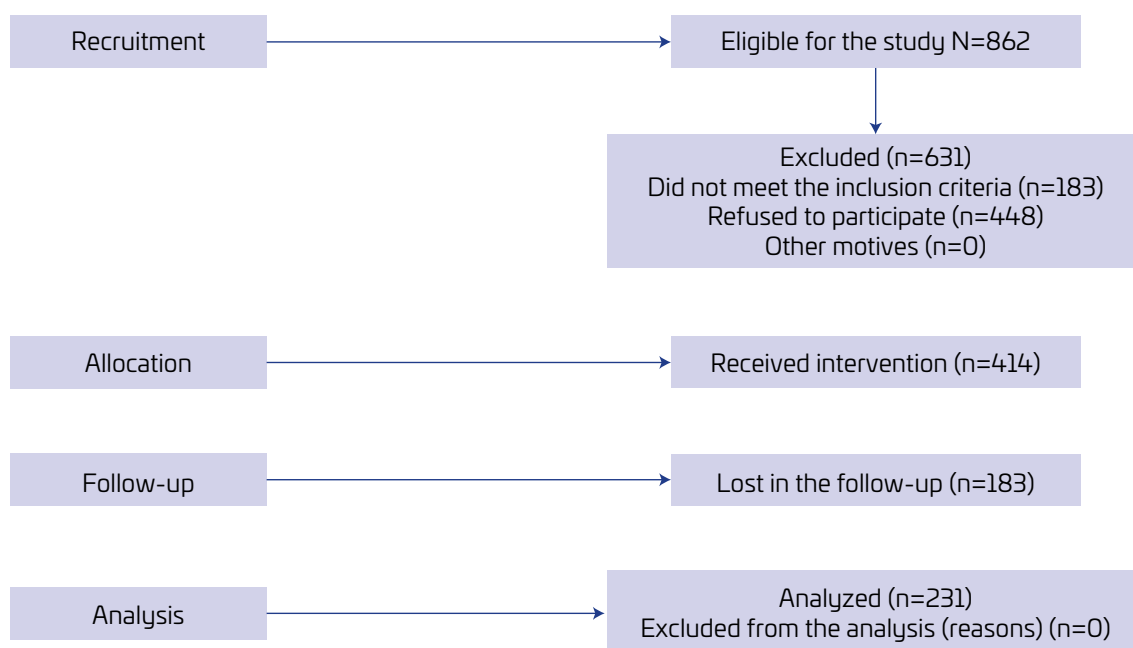
The intervention consisted of an educative, playful and collective activity, chosen because it aggregates a greater number of participants, and lasts between 40 to 80 minutes, conducted with a class at time in the scope of classes of disciplines of the Languages, Natural Sciences, Human Sciences and Exact Sciences, in hours agreed with the management and teaching staff. The activity developed was “pass or repass”, which interspersed questions of general knowledge and encompassed the theme “use and abuse of alcohol among adolescents”. The students were invited to divide into three groups of competition, in a way that the right questions added points to the group. At the end

of the actions a negotiated exposition was carried out to summarize the contents worked.

The study was approved by the Research Ethics Committee of the institution that hosted the study, under Opinion No 1109733 respecting the Resolution 466/12, of the National Health Council, by means of the signature of the Free and Informed Consent Form (FICF) in two copies, by the students aged over 18 years and by the parents of the adolescents aged under the age of the same. The other students aged under 18 years signed the Free and Informed Consent Form (FICF), stating their acceptance, equally in two copies.

The data were compiled initially in the *software* Excel. After checking, it was built a data bank in the IBM SPSS version 22.0 statistical program as a resource to enable the analysis. Descriptive statistics were used to calculate the frequency, mean and standard-deviation of the sociodemographical data of the sample in general. The descriptive analysis of the alcohol use extracted from the DUSI was done with stratification of the sample by gender. The analysis of the effect of the educative interventions about the group was realized by means of the Paired Wilcoxon test. The normality of the data was verified by the Shapiro-Wilk, Kolmogorov-Smirnov, Cramer-von Mises and Anderson-Darling tests. The confidence interval of 95% was adopted. For sample calculation the S2 test (populational variance) was used and the simple random sampling without replenishment (AASs), in that indicates the need for 231 students to compose a probabilistic sample of the population investigated, which was the number of participants that the study reached to ensure this minimum expected.

**Figure 1.** Information about the recruitment of participants, adapted from CONSORT 2010<sup>(14)</sup>.



## RESULTS

The students had an average age of  $13.6 \pm 1.6$ , being the minimum of 11 years and the maximum of 19 years. Of these, 123 (53.2%) were female and 108 (46.8%) were male. With regard to the religion, 175 (76.0%) stated having some belief. Of these, 111 (48.2%) declared as evangelical, 64 (27.8%) catholic. Among those who believe in God, but do not have any religion, it was verified 38 (16.6%). Other 17 (7.4%) students said being atheists.

The greater participation was of the middle level with 176 students (76.0%) and of these, 58 adolescents in the 7<sup>th</sup> School year. In high school, the smallest participation was of 3<sup>rd</sup> grade students (9-4.0%). Most students 196 (84.8%) stated they have already being participated previously in any type of activity of prevention for the use of alcohol in schools. With regard to the adolescents' knowledge in a general way about the statement "alcohol is considered a drug that can cause immediate problems", there was a reduction of the percentage in the second application (T1=71.0%) in the answers "true", with regard to the first application (T0=84.0%). The results also show that the percentage of answers "true" was smaller for the general female (T1=67.0%) regarding the male (T1=75.0%). With regard to the gender and age we note that, irrespective of the gender, aged 14 or under had a lower percentage in T1; regarding the male gender greater or equal to 15 years had an improvement of knowledge in (T1=69.0%) in relation to (T0=64,0%).

The results shown in the Table 1 concerning the instrument DUSI, which investigated the frequency of the use of alcohol in the last 30 days, in two times of data collect (T0 and T1). The results shows that after the educative intervention the percentage frequency of "I do not used" was smaller, for both sexes; for "1 to 2 times" the percentage increased for all groups; "3 a 9" the percentage remained equal in the male group, being that a reduction in the female group occurred; "10 + times" the percentage increased in the female group and reduced in the male.

In relation to the adolescents' expectancy in front of the use of alcohol (Table 2), it was noted that the girls' positive expectancy did not present any difference between T0 and T1.

However, in the general group and in the male group, the hypothesis test confirmed an increase of the expectancy in T1 after the intervention cycle in relation to T0.

## DISCUSSION

The adolescence is characterized by numerous transformations that allow the exposition to behavioral risk factors. And in this perspective, the alcohol experience may occur exactly in the transition of the childhood to the adult life. The sporadic consumption of drink is more frequent among the adolescents, and can occur in an abusive way, and lead to potential health risks. Therefore, the use of the substance represents a relevant question of public health, especially in this age group<sup>(16)</sup>.

**Table 2.** Evaluation of the program of prevention through the analysis in T0 and T1 of the expectancies about the use of drugs in adolescents (EEPA-A) (n=231). São Carlos, SP, Brazil, 2016.

EEPA-A - Scale of Positive Alcohol Expectancies in Adolescents			
Groups	Hypotheses	p-value	Level of significance (%)
General (n=231)	H <sub>0</sub> : MA ≥ MB <sup>1</sup>	0.0021*	0.05
	H <sub>1</sub> : MA < MB <sup>2*</sup>		
Female (n=123)	H <sub>0</sub> : MA = MB <sup>3</sup>	0.1001	0.05
	H <sub>1</sub> : MA ≠ MB <sup>4</sup>		
Male (n=108)	H <sub>0</sub> : MA ≥ MB	0.0086*	0.05
	H <sub>1</sub> : MA < MB*		

Paired Wilcoxon test; \*p<0.05; 1 H<sub>0</sub>: MA ≥ MB (The median in the first application is higher or equal to the median in the second application); 2 H<sub>1</sub>: MA < MB (The median in the first application is lower than the median in the second application); 3 H<sub>0</sub>: MA = MB (The median in the first application is equal to median in the second application); 4 H<sub>1</sub>: MA ≠ MB (The median in the second application is different from the median in the first application).

**Table 1.** Percentage of the frequency of use of psychoactive substances in the last 30 days by the adolescents who made use of any psychoactive substance (n=206\*). São Carlos, SP, Brazil, 2016.

		Frequency of use in percentage (%)							
		I did not use		1 to 2 times		3 to 9 times		10 + times	
Substances	Groups	T0	T1	T0	T1	T0	T1	T0	T1
Alcohol	Female	38	36	9	12	3	2	3	3
	Male	33	30	7	11	3	3	4	3
	Total	71	66	16	23	6	5	7	6

\*A loss of n=25 occurred, due to the non-correct filling of the instrument Drug Use Screening Inventory (DUSI).

In accordance with the characteristics presented in our study, we emphasize a greater scope of the students regarding the age group and education. The literature about adolescents in Brazil is focused mainly in the 8<sup>th</sup> and 9<sup>th</sup> year of the elementary school and/or 1<sup>st</sup> to 3<sup>rd</sup> years of the high school, with age group of 14 to 18 years<sup>(6)</sup>. This repeated in the PeNSE between 2009 and 2012, with focus on the 9<sup>th</sup> year (13 to 15 years)<sup>(17,18)</sup>. In 2015, the PeNSE enlarged its coverage of the age group from 13 to 17 years, following international guides<sup>(4)</sup>, but there are still few data about adolescents <15 years in the world<sup>(19)</sup>, thus strengthening the finding of this research. More than half of the adolescents was of female gender (53.2%), very close to the percentage shown in the literature indicating the predominance of the female gender<sup>(4,6)</sup>.

We see that the students in their majority had any type of religion or stated believing in God. And, in this sense, the literature brings the factor religiosity as protective and a modulator to the use and abuse of the substance, since contributes to the confrontation of the process of becoming adolescent<sup>(20)</sup>.

With regard to the adolescents' knowledge on the consequences of the alcohol use, most participants reported having had previous opportunity of being linked to any type of activity of prevention in the school before participating in the intervention of this study. However, failures of this knowledge were verified. When evaluating the knowledge it was clear that most part of the adolescents do not present a good perception regarding the immediate effects of the alcohol. This result seems to be related to a greater perception and importance given by the adolescents to the chronic harms (long term). In Coimbra-Portugal, it was noted that the erroneous understanding about the pathophysiology and consequences of the use of alcohol is related to empirical knowledge obtained by the students, beyond the lack of scientific information addressed in the school daily, highlighting that the lack of knowledge about the consequences can motivate the increase of the alcohol intake<sup>(21)</sup>. According to data from the PeNSE (2015), in which 39.6% of the adolescents from 16 to 17 years affirmed having already presented any drunkenness episode in his life. It may be seen as an indicative in the knowledge of the immediate effects of the alcohol found in our study<sup>(22)</sup>.

Despite the educative interventions with the students, it was not possible to intervene in the patterns of alcohol use independent of gender and age. The literature shows us that the consumption pattern is becoming increasingly early, either for the search of identity, for the fact that family life persons are the gateway to the new experience or for the association with positive expectancies of use<sup>(16)</sup>.

Some reasons are pointed out by which female adolescents initiate the consumption early, and may be related to puberty that begins earlier when compared to the male adolescents, as age increases, this situation reverses itself. Due to increased consumption by girls, the scientific community has shown a

concern with the subject, bringing in the last years contributions with emphasis on the risk and protection factors<sup>(16)</sup>.

Some authors point out that the conditions involved in the use of alcohol in girls and boys have different properties, both in relation to biological and to social and family factors, strengthening the need to deepen the specific studies for the genders and their expectancies. When assessed the adolescents' expectancy through the EEPA-A scale, it observed that this expectancy is higher after the intervention in the male group and in the general, irrespectively of the gender. The literature brings that it is possible that expectancies related to the use of alcohol can present differences among the genders, especially due to the cultural aspect and the family history. Thus, the study of the differences of gender on the expectancies of the use of alcohol has shown implications potentially important for preventive interventions<sup>(16)</sup>.

In addition, studies have observed that the expectancies of use among the adolescents may have a modulator factor and configure the behavior of drinking in a more reliable way than sociodemographic aspects. Thus, it presents a significant risk factor for the use of alcohol, independent of the gender. In this acceptance, the reflection about the differences of gender in front of the expectancies can benefit the management of questions related to the alcohol consumption, as well as guide about preventive interventions for the risk of abuse and dependence<sup>(23)</sup>. Although no changes have been observed in the expectancies of the adolescents participants, it is emphasized the relevance that this is an aspect assessed in the programs of education among adolescents, since it makes easy the planning of new interventions that have the potential to postpone the starting of the consumption and abuse of these substances.

Sessions of education in health are necessary, since help the adolescents developing competences, which will allow them to resist the influence by friends to involve in behaviors which poses a risk to their health and well-being.

With regard exclusively to application of the educative activity regarding the modulation of the alcohol consumption, it did not present any effectivity. However, in a general manner, we can emphasize that the educative interventions were a source of knowledge even that they have not reflected in the results in short term. Once that this has contributed in the sense of knowledge acquisition, in a way that favored the understanding about the subject, varying according to gender. Concomitantly, the literature points out that interventions developed with the aim to influence the use of alcohol by means of the resignification of the knowledge have expressed interesting results in the long term in the change of expectancies and in the reduction of the consumption of alcohol by young people, with greater effectiveness for the male gender<sup>(16)</sup>. On the other hand, studies about interventions based on expectancies of the alcohol use evidence the need for analysis that make a greater clarification about the matter possible. Although it is a matter in the sphere of improvement, indicates a potential



inherent in the construction of expectancies with regard to its range in prevention, specifically when the particularities of the pattern of use in accordance with the gender are evaluated<sup>(23)</sup>.

The use of instruments of evaluation and measurement of knowledge, expectancies and consumption is a strategy that favors the clinical evaluation of factors associated with the use of alcohol. In a general manner, the investigation related to above mentioned items, especially in that refers to gender differences, integrate a promising field of research that needs to be better explored, especially in Brazil<sup>(23)</sup>. It is worth highlighting the importance of giving support to the low-income countries in researches of prevention, however, worldwide the need of evaluate such initiatives has been felt, contributing thus, as a source of knowledge<sup>(24)</sup>. In this scope, the Brazilian context evidences the lack of programs based on evidences for the prevention of the use of drugs targeted to adolescents<sup>(25)</sup>.

With regard to the limitations, we can point out the difficulty in recruiting the students, inherent in the method, added to the fear of exposition regarding the theme of this study.

## CONCLUSION

The results showed that the educative intervention was not effective for modulating the use of alcohol, since, in a general form the consumption was shown as high even after the activities. The female gender deserved attention, given the significant increase in the frequency. With respect to the expectancies assessment, there was no expressive change for the girls, however it was showed an increase for the general group and male sex.

On the other hand, regarding the boys, it was noticeable a better understanding in relation to the immediate consequences of the alcohol use. However, the activity effective in the prospective of the improvement and acquisition of the knowledge regarding the substance, varying according to the sex. Demonstrating that the experimentation occurred in the adolescence, more educative strategies are interesting in the perspective of reduction of harms.

Also worth noting is the need for studies that investigate aspects and patterns associated with the consumption with the realization of preventive interventions, considering the priorities of each gender. Since the clarity of such differences may favor the elaboration of strategies of prevention in the youth. Furthermore, it is worth highlighting the need for dissemination of non-effective experiences, since negative results may contribute in the sense of reformulation and enhancement for future utilizations.

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