

Iudicium: An Educational Intervention for addressing Risk Perception of Alcohol Abuse in Adolescents

Iudicium: Una intervención educativa para abordar la percepción de riesgo del consumo problemático de alcohol en adolescentes

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Abstract

Negative consequences of alcohol abuse during adolescence have been extensively described. Consequently, different interventions have been developed to address this issue. This article describes the implementation and evaluation of *Iudicium*, an educational drama-based intervention designed to increase risk perception of alcohol abuse. In this activity, high school students judge a case in which alcohol consumption had negative consequences (e.g., fights, unwanted pregnancy, and car accident). A trial is simulated and after that, a debriefing takes place during which the activity is discussed and informational materials on the effects of alcohol is provided and commented. A total of 318 students (55.7% females and 44.3% males) from five high schools participated in the study. Data regarding risk perception of alcohol abuse and adequacy of the activity was collected before and after the intervention. Results suggest that *Iudicium* was effective in increasing risk perception of abusive drinking, reaching a 34% of increase regarding risk perception. Participants highlighted the experiential component of *Iudicium* as a strength. The intervention was well-accepted, easy to understand and apparently an effective tool for increasing risk perception of alcohol abuse amongst high school students.

Keywords: alcohol use, educational intervention, risk perception, adolescents.

Resumen

El consumo abusivo de alcohol en la adolescencia se asocia a importantes consecuencias negativas y por tanto diversos programas e intervenciones se han desarrollado para tratar esta problemática. En este artículo presentamos *Iudicium*, una actividad realizada en contextos educativos y basada en una dramatización, cuyo objetivo es incrementar la percepción del riesgo del consumo abusivo de alcohol en adolescentes. En la actividad se realiza un juicio grupal a un caso ficticio, donde los protagonistas sufren consecuencias severas a causa del consumo excesivo de alcohol (p. ej., peleas físicas, embarazo no deseado, y accidente automovilístico). A continuación, se procede a una reflexión grupal y a la discusión de información sobre los efectos del consumo de alcohol. Participaron en la actividad 318 estudiantes (55,7% mujeres y 44,3% hombres) procedentes de 5 centros de bachillerato. La percepción de riesgo de consumo de alcohol fue evaluada pre y post intervención. Los resultados indican que la actividad tuvo un impacto positivo, observándose un aumento de un 34% en la percepción de riesgo de abuso de alcohol. La aceptación de la intervención fue buena y los participantes destacaron el componente experiencial como una de sus fortalezas. En suma, *Iudicium* parece ser una intervención eficaz para aumentar la percepción del riesgo de consumo abusivo de alcohol en estudiantes.

Palabras clave: consumo de alcohol, intervención educativa, percepción del riesgo, adolescentes.

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Excessive alcohol consumption during adolescence represents a major concern for health and educational systems. Abusive drinking at that age entails a large amount of negative consequences on psychological, social and physical domains (e.g., Perkins, 2002). Among them, the most frequently reported are: difficulties in emotion regulation (Dvorak et al., 2014; Vinader-Caezols, Monleón, & Parra, 2014) physical aggression and fights (Giancola, 2002), risky sexual behaviors (Cooper, 2002), and nausea, hangovers and vomiting (Turner & Shu, 2004). Moreover, alcohol abuse comprises also neurotoxic effects on memory, learning, attention (Thoma et al., 2011; Zeigler et al., 2005), as well as changes in brain structures and its functionality (see López-Caneda et al., 2014 for a revision).

Data obtained from different samples show that adolescent excessive alcohol consumption is widely spread, showing prevalence rates in Latin American countries (Sedronar, 2011; Galduroz & Carlini, 2007) that are alike to the ones reported in the North hemisphere (Johnston, O'Malley, Bachman, & Schulenberg, 2005). In Uruguay, a South American country, data regarding alcohol consumption among adolescents is similar as the one reported by our neighbors, Argentina or Brazil. The 5th Survey of Drug Consumption in high school Uruguayan students yielded that the mean age of alcohol consumption initiation is around 13 years, 82.3% of the students have a history of alcohol consumption, and that 48.2% have consumed in the last month (Junta Nacional de Drogas, 2011).

As alcohol consumption usually starts during adolescence, educational interventions have a crucial role in preventing alcohol abuse and promoting healthy habits. Traditionally, school-based interventions follow a classical lecture format in which the teacher or the school psychologist provides information about negative consequences of alcohol misuse. However, the effectiveness of these types of interventions has been questioned (Cuijpers, 2002) and therefore, alternative methods to promote healthy habits have also been explored. Programs that employ interactive methods, which combine the use of role playing, drama, simulations and in-group discussion (Joronen, Rankin, & Päivi, 2008), might be particularly useful when working with social dynamics and decisions involved in everyday behaviors (Denman, Pearson, Moody, Davis, & Madeley, 1995). In fact, these type of programs appeared to be more effective than non-interactive ones for drug use prevention, including alcohol (Cuijpers, 2002).

In the present work, an educational classroom activity called *Iudicium* (which means "trial" in Latin) is presented. *Iudicium* was designed for increasing risk perception of alcohol abuse among adolescents by providing and opportunity to rehearse real life situations and discuss them among peers, promoting critical thinking. Specifically, this intervention attempts to: (1) increase risk perception of alcohol abuse by confronting the students to real life negative consequences of excessive alcohol consumption, (2) inform and discuss

possible negative consequences of alcohol abuse, in terms of biological, interpersonal or legal consequences and (3) promote responsible consumption by generating an opportunity to examine and reflect upon self habitual experience with alcohol.

The main aim of the current work was to evaluate the impact of *Iudicium* on risk perception of alcohol abuse among adolescents. For that purpose, a pilot study was designed in which pre and post intervention assessments of risk perception of alcohol abuse were conducted. Considering that this was the first implementation of *Iudicium*, adequacy of the intervention was also assessed.

Methods

Participants

Participants were recruited in five different Uruguayan high schools of culturally diverse backgrounds (two private and three public) during the school year (2012). One private school was catholic and the others professed no religion. Private schools were from down town locations. The three public schools were from different geographic locations: one from the countryside, one from a down town location and the other from a suburb. All of the high schools that were contacted agreed to participate in the study. We worked with a convenient sample consistent of participants of both genders, all being aged 14-17 years old. Students received no retribution for participate. Assistance during the intervention was controlled as in a regular class day. A description of the intervention as well as date and time was provided for parents in a letter. Since participants were minors, parents had to sign a letter of consent.

A total of 425 students were enrolled in the study and assessed prior to the intervention. Twenty-two did not attend school the day of the intervention. Of the 403 participants who attended the session, 85 did not complete any post-intervention measure and therefore were excluded from the analyses. Analyses related to the acceptability of the intervention were carried out in a sample of 318 students. Due to incomplete questionnaires, analyses of changes in risk perception were performed on a sample of 284 students. Flow of participants through the study is shown in Figure 1. No significant differences were found for gender, age, or Audit scores between the five different high schools.

Intervention

Iudicium is an educational classroom intervention designed to increase risk perception of alcohol abuse among high school students. In *Iudicium*, students perform a dramatization of a trial in which a case regarding negative consequences of alcohol misuse is discussed. To develop the intervention and to ensure that the content of the simulation was adequately tailored to participants, three focus groups were conducted to uncover typical situations of alcohol abuse by

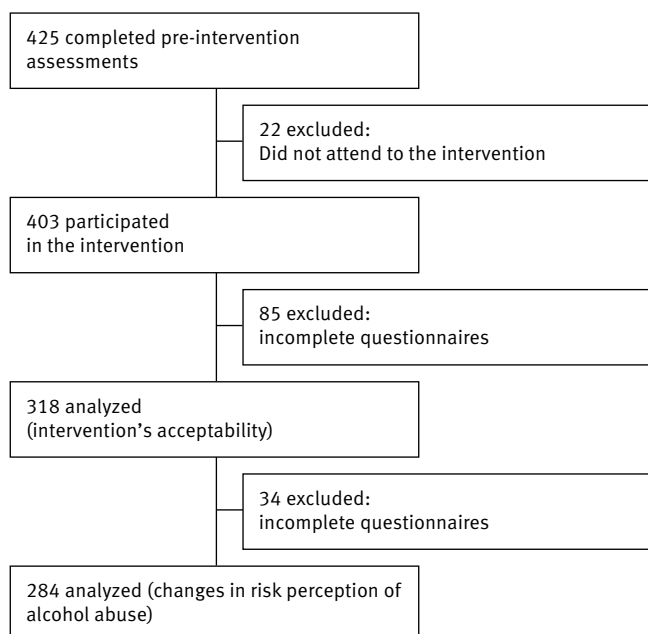


Figure 1. Participants flow chart through the study

college students. As a result of these focus groups, five fictional cases involving negative consequences of alcohol abuse were developed (see Table 1 for a brief description of the cases). The intervention was implemented in the classroom in a single session of approximate three hours. At the beginning of the activity, facilitators explained the dynamic of the intervention, and roles to perform during the simulation were assigned to all participants: father, mother, girlfriend, driver, doctor, policeman, store owner, counsel for the defense, prosecutor, and members of the jury. After the trial, a debriefing part took place. Five posters with scientific information regarding alcohol abuse were shown and discussed. The content of these posters was adapted from previous material (Junta Nacional de Drogas, 2011) and consisted of: (1) biological consequences of alcohol abuse regarding brain function and physical symptoms; (2) factors that con-

tribute to alcohol affectation (e.g., doses, binge drinking, gender, age, poly-consumption); (3) definition of hazardous drinking according to World Health Organization criteria (Babor, 1994); (4) specific risky situations for alcohol abuse in adolescents (e.g., driving, social pressure, fights); and (5) first aid for abusive consumption (safety position).

A facilitator, a co-facilitator and an assistant conducted the intervention. Their primary role was to coordinate logistics, give instructions for the simulation and guide the debriefing. The team was intensively trained in the intervention before its implementation and all facilitators were familiar with group dynamics.

Procedure

Informative sessions about the program were conducted for schools authorities, after which all schools decided to participate in the study. Schoolteachers informed participants about the date and hour of the intervention. Participants were told that a simulation activity would take place in which consequences of alcohol abuse were going to be discussed. Students were informed that participation was voluntarily and that in case of preferring not to participate actively they could be “observers”. Self-reported data were obtained before and after the intervention. For the simulation, the arrangement of tables and chairs in the classroom was adapted in order to represent a courtroom. The facilitator explained the activity and roles were assigned among those students who offered voluntarily to participate.

Measures

Sample characteristics. A questionnaire was applied in order to collect data about demographics and alcohol consumption (i.e., age at alcohol consumption initiation and hazardous drinking during last month).

Alcohol consumption. To evaluate alcohol consumption, the Alcohol Use Disorder Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993) was used.

Table 1. Description of the five cases used for the intervention

Case	Description
Car accident	After heavily drinking in a birthday party, two 16-year-old adolescents leave in a motorcycle. The driver is drunk and they have a car accident. The girl wasn't wearing a helmet. He broke his leg and she ended up in the ICU with a brain traumatism. Her parents go to trial.
Alcoholic coma	Three male friends go to a nightclub. They drink the whole night, until one gets involved in a fight with other kids and the clubs securities. The protagonist ends up in the hospital. After looking in all the city emergencies rooms, his father finally found him a day later.
Unwanted pregnant	The parents are overseas and the children throw a party in their home. Friends bring alcohol and they start drinking. Unconscious a girl had sex with a friend of a friend that is in the party. This was her first sexual relation and she became pregnant.
Fight	Adolescent fight in the door of a club. Girls and boys are involved; they started to throw bottles to each other. The police come and start shooting rubber bullets. One of the boys gets arrested; the other goes to the hospital. He has lost an eye and is severely injured.
Loss boyfriend – Bad school year	A girl drinks heavily almost every time she goes out. Her boyfriend also drinks and gets jealous and violent. One day she gets drunk and they have a fight and he told her that she is “disgusting” and dumps her. After that, she starts to drink every day, even in school breaks, she misses school several times and the school director is preoccupied.

AUDIT is a self-report 10-item scale and provides a total score ranging from 0 to 40. Total scores above 8 are considered to reflect hazardous or harmful drinking. In addition, 4 levels of drink severity (or zones) are distinguished, and a particular intervention recommendation is associated with each zone: (1) Zone one, refers to low risk drinking or abstinence (scores between 0 and 7), (2) Zone II, simple advice (scores between 8 and 15), (3) Zone III, indicates the need to provided subjects with brief counseling and continued monitoring (scores between 16 and 19), and (4) Zone IV, indicates that the subject has to be evaluated and treated by specialist (scores above 20).

Risk perception of excessive alcohol consumption. A 10-point visual analogue scale was created to assess risk perception of excessive alcohol drinking (1= not risky at all, 10=very risky).

Intervention adequacy. An ad-hoc questionnaire with four questions was created to evaluate the adequacy of the intervention. Questions were as follows: (Q1) Which is your general opinion about the activity? (1=very bad, 5=very good); (Q2) To which extent do you consider that the dynamics of the intervention were easy to understand? (1= very hard to understand, 5= very easy to understand); (Q3) How would you evaluate facilitator’s performance? (1= very bad, 5=very good); (Q4) Here is a list of characteristics of the activity, please mark those characteristics that you like the most: (1) the content of the case, (2) the acting part, (3) the debriefing part, (4) none, (5) others.

Data analyses

Descriptive statistics and t-test were used to analyze sample characteristics regarding socio-demographic data and alcohol-related variables, as well as the adequacy of the intervention.

To analyze changes on risk perception of alcohol abuse after the implementation of the program, a t-test for related samples was performed and Cohen’s d was calculated. Since the effect size for the main analysis was considered small, a secondary analysis was conducted but considering only a sub-sample of participants that showed low risk perception at baseline. Low risk perception was defined as the mean minus 1 standard deviation: $M = 7.7, SD = 1.4$ and $M - 1SD = 6.3$. Additionally, the percentage of change from baseline was calculated

as an index of the magnitude of relevant changes. To further describe the characteristics of this sub-sample a t-test was performed to analyze AUDIT scores. All data were analyzed using PASW Statistics 19.0 software package for Windows.

Results

Sample characteristics and alcohol consumption related-variables

The final sample comprises 318 students, of which 55.7% ($n = 177$) were females and 44.3% ($n = 141$) were males. Mean age of the whole sample was 15.38 yrs ($SD = .89$) and mean age of alcohol use initiation was 12.49 yrs ($SD = 1.93$). A large proportion of the sample (81.7%) scored on AUDIT zone 1 category and a 14.7% scored on zone 2 (see Table 2). No significant differences were found between genders in any of the aforementioned variables (data non shown), except for age at alcohol use initiation in which females reported alcohol use initiation a little bit later than males ($M = 12.87, SD = 1.61$ vs. $M = 12.01, SD = 2.18, p = <.001$).

Table 2. *Characteristics of the sample and alcohol consumption related variables*

Gender	(n), %
Females	(177), 55.7
Males	(141), 44.3
Age M (SD)	15,38 (0.89)
Age at initiation M (SD)	12,49 (1.93)
AUDIT Total Score M (SD)	4,58 (4.46)
AUDIT Categories	
Zone I: Alcohol Education	(251), 81.7
Zone II: Advice	(45), 14.7
Zone III: Advice plus Brief Counseling and Continued Monitoring	(7), 2.3
Zone IV: Referral to Specialist	(4), 1.3

Note. AUDIT = Alcohol Use Disorder Identification Test. M = Mean. SD = Standard Deviation.

Table 3. *Risk perception of alcohol abuse pre and post intervention*

	Risk perception of alcohol abuse		t	p	% of change	Effect size Cohen’s d
	PRE intervention M (SD)	POST intervention M (SD)				
Whole sample (n = 247)	7.70 (1.43)	7.99 (1.68)	-2.77	.006	3.76	-0.35
Sub-sample (n = 37)	4.95 (1.39)	6.62 (1.90)	-4.48	<.0001	33.73	-1.5

Note. M = Mean. SD = Standard Deviation.

Change in risk perception of alcohol abuse

A significant increase in risk perception of alcohol abuse was found after the intervention ($M = 7.70$, $SD = .091$, vs. $M = 7.99$, $SD = .107$, $t(1,283) = -2.77$, $p = .006$), however, the effect size of this increase was small (Cohen's $d = 0.35$). A secondary analysis revealed that participants who scored low risk perception at baseline ($n = 37$, $M < 6.3$) increased in almost a 34% their risk perception of alcohol abuse (see Table 3 for a detailed description). In addition, AUDIT scores of this sub-sample were significantly higher than scores in the whole sample [$M = 7.61$, $SD = 5.43$ vs. $M = 4.17$, $SD = 4.14$; $t(1,282) = 4.59$, $p < .0001$, respectively].

Intervention acceptability

A large proportion of the sample (95.3%, $n = 303$) perceived the intervention as very good or good, only a 3.5% ($n = 11$) considered it as neither good or bad, and 3 students (.9%) considered that it was bad or very bad. Almost 80% ($n = 252$) reported no difficulties in understanding the activity methodology and dynamics. 38.7% ($n = 123$) of the students considered that the content of the activity (the topic of the cases) was what they liked the most, meanwhile 27% ($n = 81$) highlighted that they liked the fact that it was an experiential learning activity, which gave them the opportunity to act and to have an active role during the session. In addition, 90.9% of the sample ($n = 289$) considered that the facilitators did a good job.

Discussion

Results of this pilot study provide preliminary evidence regarding the effects of *Iudicium*, an educational activity developed to increase risk perception of alcohol abuse among high school students. The present results suggest that after participating in *Iudicium* participants increased significantly their risk perception of alcohol abuse.

A high percentage of participants display high scores on risk perception of alcohol abuse on baseline levels. Because of this, and although statistically significant, the change on risk perception after the intervention was not large. Interestingly, a sub-group of participants who presented lower risk perception at baseline levels were the ones who benefited the most from the intervention. In those cases, risk perception of alcohol abuse increases a 34%, providing a large effect size. Furthermore, Audit scores in this sub-sample indicate a heavier drinking pattern, compared to whole sample values. Together, these results are of interest for at least two reasons. First, they indicate that *Iudicium* might be better delivered as a selective prevention program, rather than a universal one: students with low risk perception of alcohol abuse and higher consume profile, might comprise the target population of this program. Although these results provide a good starting point, further assessments of other variables related to alcohol consumption (e.g., expectancies in regard to alcohol consumption or parents alcohol consumption; Pilatti, Brussino, & Godoy, 2013) is needed in order to determine more accurately which students could benefit the most from this intervention. Secondly, and in accordance to other studies (Park, 2004; Patrick & Maggs, 2008) this result also suggests that is an inverse relationship between alcohol consumption and low risk perception. Future studies should evaluate the effects of *Iudicium* on alcohol consumption, in order to clarify if the increase in risk perception is related to a decrease in alcohol intake.

In regards to quality of the intervention, the large majority of the sample indicated that they liked the activity and that it was easy to understand. As previously suggested (Cuijpers, 2002), interactive methods including drama-based activities are considered attractive, and the "act part" is well received. It is likely that these results are affected by temperamental variables (e.g., extraversion) or social desirability. However, we pretended to mitigate this, by including more "passive" roles such as the observers, in which more introvert individuals might feel more comfortable.

Limitations of the present study include the lack of a control group and the absence of follow up assessments. In addition, the intervention assessment was conducted by means of self-reported measures, and this may have biased our outcomes. As previous research suggests (e.g., Barlés Arizón, Escario, & Galbe Sánchez-Ventura, 2014; Cassola, Pilatti, Alderete, & Godoy, 2005; Cortés Tomás, Giménez Costa, Motos Sellés, & Cadaveira Mahía, 2014; Kuntsche, Knibee, Gmel, & Engels, 2006) some variables (e.g., consumption expectancies, parents excessive drinking, age of drinking initiation, personality traits) are predictors of alcohol intake and risky behaviors. Even though the sample proceed from diverse culturally and socio-demographic backgrounds we did not collect these kind of data, which would have been interesting in order to analyze the potential impact of these variables on alcohol risk perception.

In sum, results of this pilot study are promising, showing that *Iudicium* increases the risk perception of abusive drinking. Moreover, the fact that *Iudicium* is carried out on one single session makes it easy to implement in almost every school setting and can be adapted to the school curricula. Future studies should compare *Iudicium* to other interventions and should continue assessments in order to determine in a more accurate way the target population of the program.

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Author's contributions

HB conceived and designed the study in collaboration with AIM/BURKE. Assessment was design and performed

by DM and LL from Junta Nacional de Drogas, Uruguay. All authors (HB, AFS, DM, LL and ME) contributed equally to the interpretation of results. All authors read and approved the final manuscript.

Conflict of interest

CABA S.A funded the study. The first author (HB) is CABA's CEO, which is a company that produces alcoholic beverages. IUDICIUM was designed as part of their Corporate Social Responsibility Program. To avoid conflicts of interest regarding the results of this study, assessment was designed and performed by Junta Nacional de Drogas. DM and LL work in Junta Nacional de Drogas. The rest of the authors (AF and ME) declare no conflict of interest.

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