Brief motivational interview and educational brochure in emergency room settings for adolescents and young adults with alcohol-related problems: a randomized single-blind clinical trial

Intervenção motivacional breve e brochura educacional em pronto-socorro para adolescentes e adultos jovens com problemas relacionados ao álcool: um ensaio clínico simples-cego randomizado

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Abstract

Objective: To evaluate the effectiveness of brief motivational interviewing and an educational brochure when delivered in emergency room to reduce alcohol abuse and related problems among adolescents and young adults. **Method**: A randomized single-blind clinical trial with a three-month follow-up was carried out at three emergency rooms from October 2004 to November 2005; subjects assessed were 16-25 years old treated for alcohol related events up to 6 hours after consumption. Socio-demographic data, quantity, frequency and negative consequences of alcohol consumption, motivation to change habits and future risk perception were evaluated. Statistical analysis was performed on subjects who completed follow-up (completers). ANCOVA model was used to analyze the difference between the intervention groups with statistical significance level α = 5% and confidence interval (CI) of 95%. **Results:** 186 subjects formed the initial sample, being 175 included and randomized to the educational brochure group (n = 88) or motivational interviewing group (n = 87). Follow-up assessment was performed in 85.2% of the sample. No significant difference between groups was observed. However, significant reductions ($p < 0.01$) in related problems and alcohol abuse were found in both groups. **Conclusion:** In this sample a reduction of alcohol use and related problems was observed. Preliminary data indicate that controlled clinical trials with motivational interviewing, educational brochure and nonintervention should be of future interest among Brazilian adolescent populations.

Descriptors: Alcohol-related disorders; Crisis intervention; Emergency medical services; Clinical trial; Young adult

Resumo

Objetivo: *Avaliar a efetividade da entrevista motivacional breve e de uma brochura educativa quando aplicadas em prontos-socorros para reduzir o abuso e problemas relacionados ao álcool entre os jovens.* ***Método:*** *Um ensaio clínico randomizado simples-cego com três meses de seguimento foi realizado em três prontos-socorros de outubro de 2004 a novembro de 2005, com indivíduos de 16-25 anos tratados por eventos relacionados ao álcool com até 6 horas após o consumo. Dados sociodemográficos, quantidade, frequência e consequências negativas, motivação para mudanças de hábitos e percepção para riscos do consumo de álcool foram avaliados. A análise estatística foi realizada em indivíduos que completaram o seguimento (completados). Modelo de ANCOVA foi utilizado para analisar a diferença entre os grupos de intervenção, com nível de significância estatística α = 5% e intervalo de confiança (IC) de 95%.* ***Resultados:*** *186 indivíduos formaram a amostra inicial, sendo n = 175 incluídos e randomizados para brochura educativa (n = 88) ou grupo entrevista motivacional breve (n = 87). O seguimento de avaliação foi realizado em 85,2% da amostra. Não foi observada diferença significativa entre os grupos. No entanto, uma redução significativa ($p < 0,01$) em problemas relacionados eo abuso de álcool foram encontrados em ambos os grupos.* ***Conclusão:*** *Nesta amostra, a redução do abuso de álcool e problemas relacionados foi observada. Dados preliminares indicam que os ensaios clínicos controlados com entrevista motivacional breve, brochura educativa e não-intervenção deveriam ser de futuro interesse entre a população adolescente brasileira.*

Descritores: *Transtornos relacionados ao uso de álcool; Intervenção na crise; Serviços médicos de emergência; Ensaio clínico; Adultos jovens*

Introduction

Scientific evidence supports that Emergency Room (ER) is an important site for identifying individuals with alcohol related problems and to initiate an intervention.[1,2] Adolescents with alcohol related incidents and a positive history of problematic drinking represent a high-risk subgroup which deserves attention.[3]

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Adolescents with drinking problems are at greater risk for several complications such as increase in the risk of injuries, violence, school dropout, drunk driving and unprotected sex among other harmful situations.[4-6] Alcohol consumption may also be related to mood disorder, self harm and suicide.[7] Association between early alcohol abuse and facilitated access to alcohol in this group increases the probability of adopting heavier patterns of alcohol abuse in the adulthood.[8]

Therapeutic interventions for substance abuse have been effective in reducing alcohol abuse in adolescents and young adults.[7-9] Intervention conduction for this specific population in ER is a "window of opportunities", especially for risk groups, which, due to a series of factors, would hardly seek help. Grenard et al., reviewed 17 clinical studies reported in the literature on brief motivational interviewing (MI) applied to adolescents (ages 13 to 18 years) and young adults (ages 19 to 25 years) using alcohol or other psychoactive substances. This review revealed mixed findings for the efficacy of brief MI among these populations. However, in 29% of the studies (5 of 17), there was a clear advantage of the brief MI demonstrated compared to standard care or other programming.[10] Other authors have also shown the effectiveness of the motivational intervention applied to youngsters and teenagers brought to ERs, as it reduces harm and alcohol consumption,[7,9,11] effect size may decrease as length of follow-up increases.[2,9] Behavior-oriented treatments have shown promising long-term effects.[10]

There are few studies evaluating interventions in ER clinical settings to reduce adolescent alcohol abuse[7,8,11] despite evidence of considerable prevalence (12% to 50%) of alcohol related problems in the adolescent population admitted.[3]

A positive relation after the ER intervention visit and reduction of alcohol consumption seems to exist,[12,13] however, ER visits by themselves may be stressful enough as to reduce alcohol abuse pattern and hazardous behavior in the short-term.[2]

Studies indicate that brief MI may be effective among harmful drinking adolescents and young adults in the reduction of alcohol consumption and negative consequences.[14,15] Components common to successful brief MI include one-on-one sessions and feedback on substance abuse. Interviewer empathy has shown to be an essential component in studies in adult populations.[14,16]

A randomized controlled trial with follow-up assessments at 6 and 12 months were carried out by Monti el al. with a total of 198 (18-24-year-old) patients who were either alcohol positive upon hospital admission or met screening criteria for alcohol problems were assigned randomly to receive a one-session of MI that included personalized feedback, or the personalized feedback report only. All participants received additional telephone contact 1 month and 3 months after baseline. Six months after the intervention MI participants drank on fewer days, had fewer heavy drinking days and drank fewer drinks per week in the past months when compared to non MI group.[13] Other authors have also shown the effectiveness of the motivational intervention applied to adults, youngsters and teenagers brought to ERs, as it reduces harm and alcohol consumption.[9,10,13,14]

Brief interventions are also known to be effective in changing substance abuse and other health-hazardous behaviors. Motivational counseling skills to encourage reduction in alcohol consumption compose brief interventions which are time-limited and focused on behavior change.[17]

Alcohol abuse among young people[18,19] associated to a lack of substantial effective interventions and studies designed for this population, justify the relevance and purpose of this clinical trial in Brazil.[20,21] Substantiating to the fact, mainly in Brazil, that minimal interventions may have an important role from the public health standpoint when applied in emergency situations to extremely vulnerable populations such as adolescents. The authors hypothesis is that MI plus Education Brochure (EB), may be more effective than EB alone in reducing alcohol abuse by incorporating non confrontational concepts and interviewer empathy.

This clinical trial aims to evaluate the effectiveness of a brief motivational interviewing and an educational brochure when delivered in ER clinical settings to reduce alcohol abuse and related problems among adolescents.

Method

1. Ethical issues

This study was approved by the Universidade Federal de São Paulo (UNIFESP) and Universidade Federal de Uberlândia (UFU) Ethics Committee, protocol number 0767/04 and 104/03 respectively. All subjects signed an informed consent form and an authorization by the parents or legal guardians was requested for subjects under 18 years old.

2. Study design

Single blind randomized clinical trial with 3 month follow-up assessment from baseline.

3. Setting

The study was carried out at three ER settings (central, south and north) located at Uberlândia (630.368 inhabitants, 135km^2) in the southeast region of Brazil from October 2004 to November 2005.[22] These seven day a week, 24hr ERs provide assistance for adults and children with low or high complexity cases. They were selected as sites for this study in order to reduce selection bias which would have resulted from specialized trauma center selection.

4. Sample

All subjects were 16-25 years old treated for alcohol related events and admitted to ER up to 6 hours after last alcohol use.

5. Inclusion criteria

(1) Men or women, (2) 16-25 years old, (3) screening criteria for recent alcohol consumption related to ER visit, within 6 hours prior to ER visit, (4) permanent residents in Uberlândia, (5) volunteers in this clinical trial, (6) to be able to read or understand and sign consent forms.

6. Exclusion criteria

(1) Subjects without a permanent address in the city, (2) interview impossible due to severe physical condition (e.g. unconscious or pain), (3) psychotic disorders or mentally challenged at clinical anamnesis evaluation, (4) evident cognitive damage at clinical anamnesis evaluation, (5) subjects under arrest, (6) subjects being assisted or undergoing treatment at addiction care centers, (7) refusal to participate or to sign consent form, (8) alcohol use more than 6 hours prior to ER visit.

7. Procedures

The research team was formed by three trained psychologist junior researchers (post-graduate or Master students) and one senior psychologist. The junior researchers were responsible for screening and EB intervention. The senior psychologist was previously trained according to the MI principles first proposed by Miller and Rollnick,[17] and was responsible for MI intervention. During the data selection period junior researchers alternated shifts 24 hours a day, seven days a week. A pilot trial previous to the beginning of the research protocol carried out with eleven subjects. A screening questionnaire (four multiple choice questions elaborated by researchers on alcohol consumption within 6 hours prior to ER visit) was applied to subjects aged 16 to 25 treated at ER services through patient self-report and information from family members and caregivers in order to detect if the medical visit was associated with alcohol consumption. Positive case subjects were invited to participate after being submitted to routine medical care.

Eligible subjects were randomized at baseline to one of two groups: motivational interviewing group (MI) plus educational brochure group (EB) or EB alone. A lottery system was employed and it was performed by ER personnel not linked to the clinical trial in order to avoid selection bias (Figure 1).

Discharging patients from the ER was contingent on clinical status improvement. It is important to note that patients were no longer under the influence of alcohol at intervention

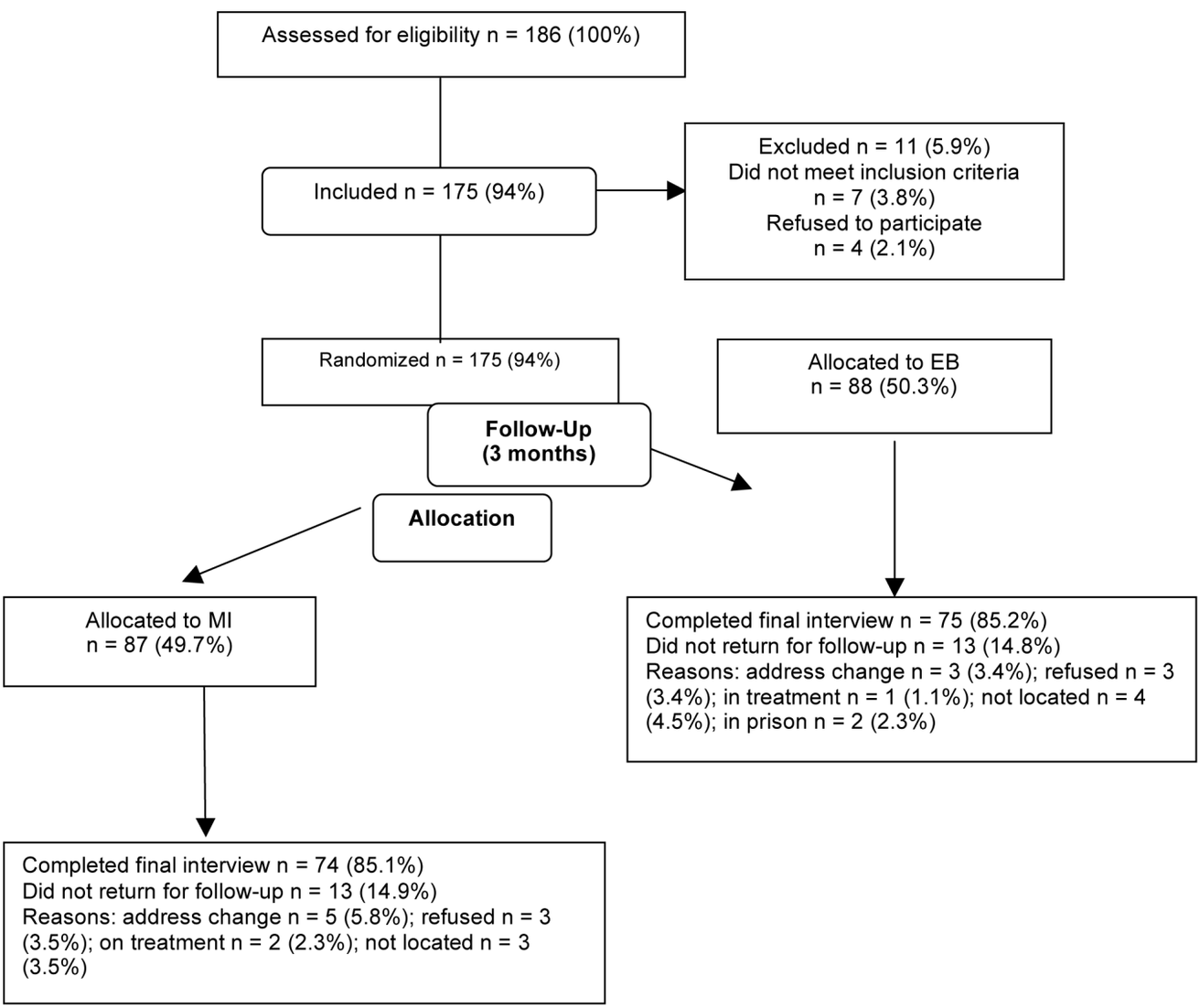

Figure 1 - Randomized sample

implementation time, assured by both the permanence time in intervention setting, in general more than 6 hours, and by clinical evaluation by the physician. Interventions took place at different times from admission to ER, due to individual clinical factors. Patients were blinded to the intervention applied.

Groups were invited to a follow-up assessment three months after baseline, when the instruments were applied by an independent researcher. This means the person who conducted the follow-up was not a baseline recruiter or interventionist, nor was intervention condition masked.If return visit was not possible, a home visit or interview call was made.

The EB group received an informative general guidance consisting of three pages on the risks of alcohol consumption and possible ways or "tips" to consider reduction or to avoid problems related to alcohol abuse (e.g. "have fun without drink, avoid drinking competitions, think about the establishing a limit and what was expected from drinking"). It was read by the patient and discussed with the psychologist Junior researchers. Procedure duration was 5 minutes maximum. The MI group received a single 45-minute motivational session. Motivational interviewing uses a number of person-centered techniques to create a favorable climate for change. There are five general principles which underlie motivational interviewing: roll with resistance, express empathy, avoid argumentation, develop discrepancy and support self-efficacy. This method is intended to help subjects develop skills and arguments in favor of change and encompasses the following elements: to evaluate and present the results, to offer information and guidance, to remove barriers, to counsel and encourage reflection, to establish a plan for change and follow-up plan development.[11] After the MI session, participants also received the informative brochure, which was read and discussed.

8. Socio-demographic data

Data were collect on age, gender, educational level, ethnicity, marital status, reason for ER visit. *S*emi-structured clinical interviewing from SCID-1/P (version 2.0) exploring the issues of use, abuse and dependence of psychoactive substances and not the entire instrument was used according to the DSM-IV diagnosis criteria (4th revised edition of the Diagnostic and Statistical Manual of Mental Disorders). The module is composed by 16 questions, divided into 3 areas: episodic use, abuse and dependence. According to DSM-IV operational criteria, the alcohol dependence syndrome comprises a group of cognitive behavioral and physiological disturbances, in the last 12 months. The presence of 3 or more symptoms in the period fulfils alcohol dependence diagnosis criteria. Otherwise it is diagnosed as harmful behavior or use episode. Agreement of this structured interview (Kappa = 0.6).[23]

9. Main outcome measures

- Alcohol Consumption Questionnaire (ACQ): 8 questions which evaluate the pattern of alcohol consumption over the previous three months, considering the number of abstinent days, and amount of alcohol consumed. This questionnaire classifies subjects in four categories; abstainers, lighter (One to 4 units/day), moderate (5 to 9 units/day) and heavy drinkers (10 or more units/day).[24]

- Rutgers Alcohol Problem Index (RAPI): unidimensional, 23-item scale which is a popular measure of alcohol-related problems in adolescent studies.[25] It evaluates drinking behavior and negative consequences associated with alcohol abuse in the previous 3 months. Response to items may range from 0 to 4 (0 = none, 1 = 1-2 times, 2 = 3-4 times, 3 = 6-10 times, 4 = more than 10 times). The scores range from 0 to 92 points. The internal scale consistency for this sample is 0.92 (high).[26] This scale has been validated in many countries and was adapted as a structured interview in Brazil from an adolescent university student sample in order to measure the negative consequences of alcohol abuse.[27]

- Alcohol Consumption Risk Questionnaire (ACRQ): 15 items developed by researchers to complement information about the risks associated with alcohol abuse, related to four domains: traffic violations (6 questions), police involvement (3 questions), physical health (3 questions) and sexuality (3 questions). Responses may range from 0 to 4 (0 = none, 1 = 1-2 times, 2 = 3-4 times, 3 = 6-10 times, 4 = more than 10 times). It is not a validated scale. Cronbach's alpha for this sample is 0.44 (moderate).

- Alcohol Perception of Risk Assessment (APRA): 16 items developed to investigate the perception of future risks associated with excessive alcohol ingestion considering that the pattern of alcohol abuse does not change within 3 months. Response to the items may range from 1 to 7 (1 = highly improbable, 2 = moderately improbable, 3 = slightly improbable, 4 = neutral, 5 = slightly probable, 6 = moderately probable, 7 = highly probable).[28] Cronbach's alpha for this sample is 0.90 (high).

- Readiness to Change Questionnaire (RTCQ): 12 items about the motivational stage to change behavior. Subjects were classified into one of three status categories: precontemplation, contemplation and action. Each question answered in a likert scale of 5 points.[29] Cronbach's alpha for this sample is 0.29 (low).

10. Data analyses

Analyses were performed to subjects who completed the process ("completers"). A total mean score was computed for each scale analyzed in the following manner: the sum of the individual item responses divided by the number of item questions result was used to calculate total mean scores of RAPI and APRA scales. Final mean scores of ACRQ scale were calculated as the total mean from the mean of each domain. In this way, the total mean scores presented are in the same value range as the original scale used. All the answers to questionnaire items were analyzed but only the total scale score results are presented. Comparisons between the intervention groups regarding categorical variables at baseline (socio-demographical data, general information on the medical intercurrence and SCID-1) were performed using χ^2 tests. The *t* test for independent samples was used for mean comparison of numeric variables at baseline. Initially, a general regression model was used having as explanatory variables the type of intervention, the baseline value of the variable and the interaction between the baseline value and intervention type. The interaction term was not significant

in all models, so the comparisons of mean changes from the baseline of ACQ, RAPI, ACRQ and APRA scales between the two groups were performed using ANCOVA (Analysis of Covariance) models which evaluated the final results in relation to baseline.[30]

Comparisons concerning changes in RTCQ within each intervention group were performed through generalized McNemar test and between groups, the χ^2 test. Statistical significance level used was 0.05 (α = 5%) and confidence interval 95%.[31]

Information collected was stored in databases using Statistical Package for Social Sciences (SPSS) software, version 13 (SPSS, Inc., Chicago, IL, USA).

Results

1. Participants

A total of 186 subjects were eligible for the clinical trial, but 4 refused to participate due to physical pain, fatigue or lack of interest and 7 did not meet inclusion criteria (Figure 1). The randomized sample was 175 subjects (MI, 87; and EB, 88), age 21.8±2.6 (mean±SD) years old (ranging from 16 to 25), most subjects were male (90.3%, 158) and single (72.6%; 127).

2. Drop outs

From a total of 87 subjects randomized to the MI group, 13 subjects (14.9%) were not interviewed at the 3 month follow-up visit. Reasons: address change (5 subjects, 5.8%), refusal to participate in the second interview (3 subjects, 3.5%), hospitalization due to alcohol dependence treatment (2 subjects, 2.3%) and could not be located (3 subjects, 3.5%).

From a total of 88 subjects randomized to the EB group, 13 subjects (14.8%) were not interviewed at 3 month follow-up visit. The reasons were: address change (3 subjects, 3.4%), refusal to participate in the second interview (3 subjects, 3.4%), hospitalization due to alcohol dependence treatment (1 subject, 1.1%) and EB 15.38%, n = 2), could not be located (4 subjects, 4.5%) and in prison (2 subjects, 2.3%).

3. Baseline and follow-up return

Comparative analyses of socio-demographical data, reason for ER visit and frequency of disorders related to alcohol abuse and dependence (SCID) between two groups are shown in Table 1A. No significant difference between groups was found in relation to gender, ethnicity, marital status, school status, reason for ER visit and SCID. No significant differences between groups were found in relation to age, RAPI, QRCA, and APRA total mean scores gender at baseline (Table 1b).

Baseline subjects interviewed at follow-up visit was 85.1% (n = 149). This was similar in the two groups [EB, 85.2% (n = 75); and MI, 85.1% (n = 74); χ^2 = 0.03; p = 0.8625]. No difference between completers and non-completers was found regarding any baseline characteristics.

4. Main outcomes

1) Alcohol use days

No significant difference was found between MI and EB groups regarding changes in alcoholic beverage intake at 3 month follow up. Groups changed equally as seen in Table 2. However, a decrease in consumption was found at the 3 month follow up evaluation regarding days of alcohol use (-10.0 days, p < 0.01, 95% CI [-13.9; -6.1]), days with moderate use: (-4.8 days, p < 0.01, 95% CI [-7.5; -2.0]) and days with heavy use (-4.5 days, p < 0.01, 95% CI [-7.5; -1.4]).

2) RAPI

Table 2 shows the total mean scores of the RAPI at 3 month follow up. The two groups had changed in the same way (p = 0.63). Nevertheless, when the time effect was evaluated, a significant reduction of negative consequences (p < 0.01) was observed, 3 months after the first interview, in both groups (-0.38, 95% CI [-0.49; -0.28]).

3) QRCA

Both groups changed equally (p = 0.09) during the 3 month follow up period. Regarding the effects of time, a significant reduction in the total score of negative consequences associated to alcohol use was found, similar in both groups at follow-up (-0.37, p < 0.01, 95% CI [-0.42; -0.32]).

MI group and the EB changed equally (p = 0.54) after 3 months, as shown in Table 2. However, different from the previous results, there was no significant long term change in risk perception associated with alcohol in either group (-0.07, p = 0.56, 95%CI [-0.32; 0.17]).

4) RTCQ

Analysis was performed by classifying the subjects into the following motivational stages: pre-contemplation, contemplation and action at the initial and 3 month follow up period. Comparing groups, no significant difference was found after 90 days (p = 0.90, Table 3). However, intra-group analysis was significant (MI p < 0.01 and BE p < 0.01) as shown in Table 4.

Discussion

While brief motivational interventions for substance abuse have been widely tested, this is one of the first randomized trials to be conducted in Brazil in ER clinical settings with a considerable sample size for adolescents and young adults, which may be considered difficult to reach.[32-35] Data from the 3-month follow up suggests that intervention groups improved, but intervention effects were limited to differential reductions favoring MI.

It may be suggested that one of the circumstances that may have influenced this result is the fact that brief interventions designed in the literature usually target risk populations at an early stage of alcohol related problems.[1,11] Our sample was composed of approximately 40% of alcohol dependents in each group (MI = 37.9% and EB = 35.2%).

MI alone does not seem able to promote significant and lasting changes, especially when other vulnerabilities may be interfering with the drinking behavior of these young people, such as social expectation of use and the easy access of alcoholic beverages such as it is in our country.

Yet a high rate of subjects in this trial completed the 3 month follow up. Drop out rates and compliance to interventions appears to be a problem in many studies, especially in the addiction field.[36]

Table 1A – Socio-demographical data, reason for ER visit and alcohol abuse and dependence disorder (SCID), according to initial interview – all randomized

	MI (n = 87)	EB (n = 88)	Total (n = 175)		
	n (%)	n (%)	n (%)	χ^2	p
Gender				1.57	0.21
Male	81 (93.1)	77 (87.5)	158 (90.3)		
Female	6 (6.9)	11 (12.5)	9.7 (17.0)		
Ethnicity				2.96	0.09
Caucasian	57 (65.5)	68 (77.3)	125 (71.4)		
Non-Caucasian	30 (34.5)	20 (22.7)	50 (28.6)		
Marital status				0.09	0.77
Married	23 (26.4)	25 (28.4)	48 (27.4)		
Single	64 (73.1)	63 (71.6)	127 (72.6)		
School status				3.17	0.37
Illiterate	01 (1.1)	01 (1.1)	02 (1.1)		
Junior High School	48 (55.2)	37 (42.0)	85 (48.6)		
Senior High School	35 (40.2)	47 (53.4)	82 (46.9)		
University or College	03 (3.4)	03 (3.4)	06 (3.4)		
Reason for ER visit				0.91	0.92
Falls	12 (13.8)	15 (17.0)	27 (15.4)		
AMV*	25 (28.7)	26 (29.5)	51 (29.1)		
Other accidents	29 (33.3)	25 (28.4)	54 (30.8)		
Acute intoxication	08 (9.20)	10 (11.4)	18 (10.3)		
SCID				0.14	0.93
Abuse episode	12 (13.8)	13 (14.8)	25 (14.3)		
Abuse	42 (48.3)	44 (50.0)	86 (49.1)		
Dependence	33 (37.9)	31 (35.2)	64 (36.6)		

** AMV: Accidents involving Motor Vehicles.*

This very often compromises data extrapolation. It may be worth to mention on the fact that the proportion of males was quite high in this sample, as it tends to fall between 65 and 75% in other studies.[37]

It is important to note that groups had significantly improved, observing more youths in action stage during the follow up period [MI action stage 50% (final) vs. 13.5% (baseline) and EB action stage 46.7% (final) vs. 16.0% (baseline)] which might be connected to clinical implications for intervention. Any reduction in consumption directly implicates on various risks associated with use within a harm reduction perspective.

Furthermore, it may be that experiencing an alcohol-related ER visit itself was the trigger to modify short-term alcohol consumption. However, the fact we did not observe a significant reduction in problems related to alcohol consumption or relevant behavioral change may be associated with a short or not long enough observation time.

Encouraging results were found in another recent Brazilian study, a clinical trial of brief intervention in 145 Brazilian college students deemed to be "risky" drinkers. Treated students had reduced the amount of alcohol abused per occasion after a 24- month follow-up, and lowered Alcohol Abuse Disorder Identification Test (AUDIT) and RAPI scores in comparison

Table 1B – Summary of baseline characteristics – all randomized

Baseline	MI (n = 87)		EB (n = 88)		Total (n = 175)		MI x EB	
	Mean	SD	Mean	SD	Mean	SD	t	p
Age*	21.7	2.6	21.9	2.5	21.8	2.6	-0.63	0.53
Days of alcohol use	23.8	22.0	23.5	22.9	23.6	22.4	0.09	0.93
Days of light use**	3.5	11.2	4.6	11.4	4.1	11.2	-0.66	0.51
Days of moderate use***	9.2	16.1	8.1	15.3	8.6	15.7	0.47	0.64
Days of heavy use†	11.1	19.1	9.7	18.6	10.4	18.8	0.50	0.62
RAPI – Total Mean	1.03	0.84	0.97	0.84	1.00	0.84	0.49	0.63
QRCA – Total Mean	0.65	0.40	0.54	0.36	0.60	0.38	1.95	0.05
APRA – Total Mean	2.41	1.37	2.49	1.43	2.45	1.40	-0.35	0.72

** Years; ** One to 4 units/day; *** 5 to 9 units/day; † 10 or more units/day.*

Table 2 – Analysis of days of alcohol use, total scores of RAPI, QRCA and APRA scales comparing MI and EB groups – completers

	MI (n = 74)		EB (n = 75)		Time x Group interaction		Time effect		Group effect	
	Mean	SD	Mean	SD	F	p	F	p	F	p
Days of alcohol use						0.75	25.83	< 0.01	0.38	0.54
Baseline	23.3	21.9	22.4	22.4						
After 90 days	14.0	18.5	11.8	15.3						
Change	-9.3	23.1	-10.6	24.8						
Days of light use*					0.08	0.78	0.01	0.93	< 0.01	0.98
Baseline	4.0	12.0	3.6	10.3						
After 90 days	3.5	9.6	3.8	11.9						
Change	-0.5	15.7	0.2	15.3						
Days of moderate use**					0.08	0.78	11.83	< 0.01	< 0.01	0.97
Baseline	8.9	15.2	8.5	14.6						
After 90 days	3.7	10.4	4.1	8.8						
Change	-5.2	18.9	-4.4	14.8						
Days of heavy use***					0.24	0.63	8.63	< 0.01	1.37	0.24
Baseline	10.5	18.9	9.0	17.4						
After 90 days	6.8	13.4	3.8	8.0						
Change	-3.7	19.6	-5.2	17.4						
RAPI – Total Mean					0.24	0.63	50.73	< 0.01	0.01	0.95
Baseline	0.97	0.79	0.93	0.82						
After 90 days	0.56	0.58	0.58	0.55						
Change	-0.41	0.67	-0.36	0.63						
QRCA – Total Mean					3.00	0.09	221.31	< 0.01	6.46	0.01
Baseline	0.67	0.41	0.52	0.35						
After 90 days	0.26	0.24	0.19	0.21						
Change	-0.41	0.30	-0.32	0.31						
APRA – Total Mean					0.37	0.54	0.34	0.56	0.01	0.94
Baseline	2.46	1.39	2.37	1.32						
After 90 days	2.31	1.62	2.37	1.42						
Change	-0.15	1.68	0.00	1.38						

** One to 4 units/day; ** 5 to 9 units/day; *** 10 or more units/day.*

with the non- intervention group.[38] These results reinforce the idea that brief intervention strategies may be an intervention option for youths. The fact that in this study a minimal intervention as the brochure was effective in reducing alcohol consumption deserves to be highlighted. These findings have implications on how alcohol related problems should be taken into consideration by public health officials, researches and emergency patient care protocols.[39]

The main limitation of this clinical trial was its exclusive reliance on self-report in evaluating intervention effects. Self-reports could be biased. The findings would have been enhanced if objective indices (e.g., hepatic function, blood alcohol concentration) or self-report corroboration (e.g., relative report) could have been obtained.[39] Complementary exam was not performed because it would have led to an increase in costs. Our option was for a homogenous sample procedure in case a relative was not available at follow up assessment. Another limitation to mention is the lack of a placebo control group (nonintervention), which would have been more informative and may have brought more precise conclusions. The experimental intervention was implemented solely by one researcher. This may brings to the study bias issues as well as difficulty in separating intervention effect from therapist effect. Additional limitations worth to mention are: intent to treat analyses were not conducted and only a 3 month follow-up when differential findings may emerge later as it has been shown in other studies.

In the long term the effectiveness of brief intervention may deteriorate.[40] It would be appropriate to test which components of MI are most responsible for maintaining long-term changes, as well as efficacy predictors such as: gender, marital status, mental health and readiness to change. Data suggests that groups

Table 3 – Summary of changes in stages of readiness to change in the MI and EB groups – completers

	MI (n = 74)	EB (n = 75)	Total (n = 149)		
	n (%)	n (%)	n (%)	χ^2	p
RTCQ Change				0.21	0.90
Same	33 (44.6)	33 (44.0)	66 (44.3)		
Improved	32 (43.2)	31 (41.3)	63 (42.3)		
Worsened	09 (12.9)	11 (42.3)	20 (13.4)		

Table 4 – Stage of readiness to change (RTCQ) at baseline and after three months follow up in the MI and EB groups - completers

			Stage of readiness 3 months follow up								McNemar p
			Pre-contemplation		Contemplation		Action		Total		
			n	%	n	%	n	%	n	%	
MI	Baseline	Pre-contemplation	14	18.9	2	2.7	11	14.9	27	36.5	
		Contemplation	6	8.1	12	16.2	19	25.7	37	50.0	
		Action	2	2.7	1	1.4	7	9.5	10	13.5	
		Total	22	29.7	15	20.3	37	50.0	74	100.0	< 0.01
EB	Baseline	Pre-contemplation	14	18.7	2	2.7	7	9.3	23	30.7	
		Contemplation	5	6.7	13	17.3	22	29.3	40	53.3	
		Action	1	1.3	5	6.7	6	8.0	12	16.0	
		Total	20	26.7	20	26.7	35	46.7	75	100.0	< 0.01

improved with brief intervention. Besides the limitations of this study, MI and EB are possible approaches for young people with alcohol related problems who are treated in ER settings.

Conclusion

In this sample a reduction of alcohol use and related problems was observed. This preliminary data indicates that controlled clinical trials with MI and non- intervention should be of future interest among Brazilian adolescents and young adults.

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Writing group member	Employment	Research grant[1]	Other research grant or medical continuous education[2]	Speaker's honoraria	Ownership interest	Consultant/ Advisory board	Other[3]
Maria Luiza Segatto	UFU	-	-	-	-	-	-
Solange Andreoni	UNIFESP	-	-	-	-	-	-
Rebeca de Souza e Silva	UNIFESP	-	-	*	-	-	-
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** Modest*
*** Significant*
**** Significant: Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.*
Note: UFU – Universidade Federal de Uberlândia; UNIFESP = Universidade Federal de São Paulo; CNPq = Conselho Nacional de Desenvolvimento Científico e Tecnológico.
For more information, see Instructions for Authors.

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