

THE ADOLESCENT AND PARENT BRIEF INTERVENTION PROTOCOL FOR DRUG USE TREATMENT: A PILOT STUDY IN A BRAZILIAN SAMPLE

Fernanda Cerutti¹, José H. Marco², Carmen Moret-Tatay³
and Irani Iracema de Lima Argimon⁴

¹*Atitus Educação (Brazil)*; ²*University of Valencia*; ³*Catholic University of Valencia San Vicente Mártir (Spain)*; ⁴*Pontifical Catholic University of Rio Grande do Sul (Brazil)*

Abstract

The parents' participation in adolescents' drug use treatment is a fundamental resource for good progress. Therefore, this pilot study demonstrates the feasibility of a brief intervention for drug-using adolescents, which contains sessions for parents and was adapted to a Brazilian sample. The protocol adaptation was tested in 28 adolescents (aged 14-18 years) to compare three conditions: 1) Group with adolescent/parent (GAP); 2) group with adolescent only (GA) and 3) treatment as usual (TAU). GAP post-test outcomes reveal significant improvement. The experience could test the applicability of a protocol to the Brazilian context. Despite showing results from a pilot study, the brief intervention demonstrated promising results.

KEY WORDS: *substance use disorders; brief intervention; parent-adolescent relationship.*

Resumen

La participación de los padres en el tratamiento del consumo de drogas en adolescentes es un recurso fundamental para un buen progreso de la psicoterapia. El objetivo de este estudio piloto fue comprobar la viabilidad de la adaptación de la Intervención breve para adolescentes brasileños con consumo de drogas, con sesiones para los padres. La muestra estuvo formada por 28 adolescentes (de 14 a 18 años) con alto consumo de drogas residentes en una comunidad terapéutica con ingreso de larga duración. Para ello se compararon tres condiciones: 1) grupo con adolescentes y padres (GAP); 2) grupo solo con los adolescentes (GA) y 3) tratamiento habitual (TAU). El grupo GAP mostró una mejoría mayor que las otras condiciones de tratamiento. Este estudio demuestra la viabilidad de la aplicación de la terapia breve con padres y adolescentes consumidores de drogas en un

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Correspondence: Fernanda Cerutti, Dona Laura, 1020, Porto Alegre (Brazil). E-mail: fernanda.cerutti@atitus.edu.br

contexto sociocultural diferente como es el brasileño. A pesar de ser un estudio piloto, la terapia breve mostró resultados esperanzadores.

PALABRAS CLAVE: *trastornos por consumo de sustancias; terapia breve; relación padres-hijos.*

Introduction

Adolescence is a period of vulnerability to the use of drugs, especially in the population aged 12-17 (United Nations Office on Drugs and Crime [UNODC], 2019). In addition, the use by young people is more elevated than other generations in many countries around the world (UNODC, 2022). The development of difficulties in many areas of life is frequent in adolescent drug users (Castellanos-Ryan, et al., 2012; Fergusson & Boden, 2008). Adolescents with drug use can present academic problems, such as low academic performance and a high prevalence of school dropout (National Institute on Drug Abuse [NIDA], 2014a; Sillins et al., 2014).

The use also increases the risk of unplanned pregnancies and sexual behavior risks, including infectious diseases (Dembo et al., 2014; NIH, 2014). In addition, violence, legal problems, and driving under the influence of drugs (Fergusson & Boden, 2008) are other risks linked to alcohol and other drug use by adolescents (Winters et al., 2014). In Brazil, the prevalence of HIV/AIDS in adolescents who inject drugs (13-19 years old) is 1.6%, and hepatitis C infection caused by drug use in adolescents (10-19 years) is 0.5%. The rate of deaths by drug use in adolescents aged 10-19 years is 0.8%. Moreover, the amount of younger people (18-25 years old) involved in drug trafficking crimes is 17% (Duarte et al., 2009).

Although drug and alcohol use in adolescence is a widely recognized global problem, treatment for people aged 15 years or more is scarce (UNODC, 2016). In the United States, 22.5 million people aged 12 and older need treatment for alcohol or illicit drug use (Substance Abuse Mental Health Service Administration [SAMHSA], 2015). In European countries, such as Spain, people aged 18 or younger admitted to treatment for problems with alcohol or illicit drug use had an incidence rate of 2.340 (Observatorio Español de la Droga y las Toxicomanías, 2016). In Brazil, 284 (0.2%) children aged 5-9 years and 6.047 (20%) adolescents aged 10-19 years were admitted to public substance use treatment (Duarte et al., 2009).

Therefore, it is important to address some evidence-based strategies to attract and maintain adolescent drug users in treatment (National Institute for Abuse [NIA], 2014): a) the brief intervention (BI), since it is a strategy that can help reducing drug use and risky behaviors (NIA, 2014; Winters, 2016); b) group therapy is an important support to achieve abstinence (Velasquez et al., 2015); c) the behavioral approaches (Hogue et al., 2014) intend to help the adolescent in acquiring adequate skills and strategies to reduce the drug-using behavior (Winters et al., 2014); d) motivational interview therapy is an efficacious approach (D'Amico et al., 2015) that focuses on the adolescents' engagement in treatment (Stewart et al., 2016); and e) family-

based therapeutic approaches (Stockings et al., 2016; Tanner-Smith et al., 2013) focuses on reducing family risk factors and promoting parents' monitoring (Winters et al., 2014).

When focusing on family-based treatments for adolescent drug use, previous studies tested the efficacy of protocols that involves parents' participation. Brief Strategic Family Therapy (BSFT) was compared to a Treatment as Usual (TAU) and showed more significant improvements (Robbins et al., 2011). Another family-based treatment, Multidimensional Family Therapy (MDFT), was compared to Cognitive-Behavioral Therapy (CBT) and presented better results in the follow-up analysis (Liddle et al., 2008). Both therapies are recommended by the National Institute on Drug Abuse (NIDA, 2014b). Other studies are showing that the parent's involvement in adolescent treatment is fundamental (Koning et al., 2009; Stanger et al., 2009; Slesnick & Prestopnik, 2005). Recent school survey results in the United States presented decreases in past-year substance use among young people (NIDA, 2021). Parental monitoring increased during the distancing rules of the Covid-19 pandemic and may have contributed to these results (Johnston et al., 2022).

As mentioned, for this study was elected a brief intervention protocol with parent's participation to treat drug use in adolescents (Winters et al., 2006). This 4-session protocol comprises the family based-approach and motivational interview strategies. We believe these aspects are effective when treating adolescents in the Brazilian context and fundamental to think about treatment availability in public health. Group therapy is another important aspect to be considered when focusing on adolescents. Thus, an adapted group version was applied (Cerutti et al., 2017).

Regarding the studies with the brief intervention protocol, the first version was developed at the University of Minnesota, USA (Winters & Leitten, 2001). After some adjustments, another version was established in 2006 (Winters et al., 2006). This version was tested by Winters and Leitten (2007) in a randomized clinical trial with 79 adolescents who were identified in a school setting, and subdivided into three conditions: brief intervention for adolescents and parents (BI-AP; $n= 26$); brief intervention for adolescents only (BI-A; $n= 26$) and control group (CON; $n= 27$). BI-AP was the condition that presented the best outcomes. Similarly, the results of the subsequent study with 315 adolescents, in the same context and the same conditions, showed better outcomes in BI-AP (Winters et al., 2012).

In the one-year follow-up, the result concerning a sample of 284 adolescents, the same participants of the Winters et al. (2012) study, presented a longer positive outcome in BI-AP condition (Winters et al., 2014). The long-term efficacy of the brief intervention was investigated in a recent follow-up study that assesses 74 adolescents after approximately 3.5 years post-intervention (Abedi et al., 2019).

Therefore, the brief intervention protocol was effective in the treatment of adolescents in a school setting. However, two questions remain to be answered are: a) whether the brief intervention is feasible in a clinical population of adolescents and, b) whether the brief intervention is feasible in other cultural context than the United States. Thus, through this pilot study, we aimed to demonstrate the feasibility

of a brief intervention in a clinical sample of drug-using adolescents, which contains sessions for parents and was adapted from a North American protocol to a Brazilian sample. Specifically, we described the protocol's application in a different context, compared to the originally tested one.

Method

Participants

Initially, 36 adolescents residents in a therapeutic community were assessed, and the final sample was composed of 28 adolescents aged 14-18 years. Concerning the dropouts in the study, 4 participants were excluded from the research for not having completed the evaluation questionnaires. Also 32 adolescents were assessed for eligibility criteria, from which we had 3 early clinical discharges (GAP= 2 cases; TAU= 1 case), and 1 case participation refusal in TAU condition." All adolescents were male, studied in public schools and none of them lived with both parents. The mean age was 15.86 ($SD= 1.01$).

The adolescents were assigned in three conditions: 1) the group with adolescent/parent (GAP); 2) group with adolescent only (GA); and 3) treatment as usual (TAU), to maintain the same conditions of the original studies (Winters & Leitten, 2007; Winters et al., 2012). However, since a brief intervention was applied in a clinical sample who received the local intervention, we had a TAU, which is different from the original studies, when the control group with pre- and post-test was used.

Non-randomly assigned, all the adolescents whose parents participated in the study were in the GAP ($n= 12$). The other adolescents who received the first session of the intervention, but did not have the parents' participation, were assigned to the GA ($n= 10$). The TAU ($n= 10$) was assigned to boys who could not participate in the first session but were evaluated in two moments, as in the other conditions.

Regarding characteristics of sample the mean age in the conditions GAP was 15.70 ($SD= 0.82$), GA was 15.60 ($SD= 1.17$), and TAU was 16.38 ($SD= 0.92$). The adolescent groups did not differ in any characteristics (see Table 1). Concerning the group of parents who participated in the study, eight (28.6%) were mothers, one (3.6%) was a sister and one (3.6%) was a grandmother.

All the adolescents were poly drug users. Cannabis was the drug that all adolescents tried, and the other drugs that were used the most was alcohol (89.3%, $n= 25$), tobacco (82.2%, $n= 23$), and crack-cocaine (78.6%, $n= 22$). When asked about drug predilection and problems with drug use, cannabis was the most likely to be chosen (57.1%, $n= 16$) and tobacco was the drug that engendered most problems according to adolescents (14.3%, $n= 4$). Regarding the severity of drug use by parents, six (21.6%) had moderate tobacco use and one (3.6%) had moderate alcohol use. Regarding the use of more than one substance, seven

(25.0%) were poly drug users: six (85.7%) used licit drugs and one (14.3%) used illicit drugs.

Table 1
Conditions characteristics in the baseline data

Variable	All (n= 28)	GAP (n= 10)	GA (n= 10)	TAU (n= 8)
School grade	n (%)	n (%)	n (%)	n (%)
Elementary	25 (89.3)	9 (90.0)	9 (90.0)	7 (87.5)
High	3 (10.7)	1 (10.0)	1 (10.0)	1 (12.5)
Father situation				
Deceased	8 (28.6)	2 (20.0)	3 (30.0)	3 (37.5)
No contact	7 (25.0)	4 (40.0)	2 (20.0)	1 (12.5)
Provider	7 (25.0)	2 (20.0)	2 (20.0)	3 (37.5)
Justice problems	3 (10.7)	1 (10.0)	1 (10.0)	1 (12.5)
Drug user	3 (10.7)	1 (10.0)	2 (20.0)	-
Mother situation				
Deceased	5 (17.9)	-	3 (30.0)	2 (25.0)
No contact	1 (3.6)	-	1 (10.0)	-
Unemployed	3 (10.7)	-	-	3 (37.5)
Provider	11 (39.3)	9 (90.0)	1 (10.0)	1 (12.5)
Justice problems	1 (3.6)	-	-	1 (12.5)
Drug user	5 (17.9)	1 (10.0)	4 (40.0)	-
Retired	1 (7.1)	-	1 (10.0)	1 (12.5)
Criminal law infraction	17 (60.7)	5 (50.0)	6 (60.0)	6 (75.0)
Infraction Severity*				
Mild	3 (11.0)	1 (10.0)	1 (10.0)	1 (12.5)
Average	2 (7.0)	1 (10.0)	1 (10.0)	-
Severe	4 (14.0)	3 (30.0)	1 (10.0)	-
Very severe	8 (29.0)	-	3 (30.0)	5 (62.5)
Previously treatment	22 (78.6)	6 (60.0)	8 (80.0)	8 (100.0)
Type of current treatment				
Admission	5 (17.9)	3 (30.0)	1 (10.0)	1 (12.5)
Detoxification	18 (64.4)	6 (60.0)	9 (90.0)	3 (37.5)
Support abstinence	2 (7.1)	1 (10.0)	-	1 (12.5)
Social reintegration	3 (10.7)	-	-	3 (37.5)
Drug severity problems*				
Moderate use	13 (46.4)	6 (60.0)	5 (50.0)	2 (25.0)
Severe use	15 (53.6)	4 (40.0)	5 (50.0)	6 (75.0)

Notes: GAP= adolescent and parents' group; GA= adolescent group; TAU= treatment as usual.; *Drug Use Screening Inventory (DUSI) - absolute density of problems mean score: Moderate use (20%); severe use (80%) (De Micheli & Formigoni, 2000, 2002).

Instruments

- a) *Ad hoc Sociodemographic Questionnaire*. The questionnaire presented questions about the adolescents (age, academic situation, previous, and current treatment) and his/her parents (age, father and mother context). Also, the

- severity of criminal law infraction was added to this questionnaire, based on the Brazilian Child and Adolescent Statute (Brazil, 1990). The severity was subdivided into: a) Lower offensive potential: possession of a narcotic substance for own use, use of a white weapon in a public place; b) Average offensive potential: theft, receiving stolen objects; c) Severe offensive potential: illicit drugs trafficking, use of firearms; d) Very serious threat to life: homicide and robbery.
- b) *Drug Use Screening Inventory* (DUSI; Tarter, 1990). The DUSI is used to evaluate the adolescents' profile of problematic drug use. It was adapted and validated to the Brazilian context (De Micheli & Formigoni, 2000) with a 149-item self-report scale that includes 10 adolescent life domains. Each item has a "yes-no" response option. In this study, we applied the short version, in which the first part assesses last month substance use of 13 different drugs, and the second part contains 15 items about craving, tolerance and abstinence. The results were obtained using the absolute density problems, we divided the number of affirmative answers in the area by the total number of questions in the area number, and multiplied by 100 (De Micheli & Formigoni, 2002). The Brazilian version of DUSI presents a good internal consistence ($\alpha = .96$) (De Micheli & Formigoni, 2002).
- c) *Stages of Change Readiness and Treatment Eagerness Scale, version 8* (SOCRATES V.8; Miller & Tonigan, 1996). The 19-item version, with a 5-point scale (from totally disagree to totally agree), was adapted for the Brazilian context (Figlie et al., 2004). This version comprises two factors (Ambivalence-Recognition [AmRec] and Taking Steps) and presents an adequate internal consistency: AmRec ($\alpha = .86$) and Taking Steps ($\alpha = .71$), (Figlie et al., 2004). Maisto et al. (2003) validated this 19-item self-report measure in the adolescent population. In this study, the SOCRATES was used to evaluate the adolescents' motivation in the pre and post-test.
- d) *Alcohol, Smoking, and Substance Involvement Screening Test* (ASSIST; World Health Organization, 2002). The test consists of eight questions to detect the consumption of 10 substances. Was used to assess the parents' or tutors' drug use problems. The Brazilian version presents good internal consistency at the following drugs' subscales: alcohol ($\alpha = .80$), cannabis ($\alpha = .79$), and cocaine ($\alpha = .81$), (Henrique, Micheli, Lacerda, Lacerda, & Formigoni, 2004).

Procedure

The parents were invited to participate and asked whether the adolescents had permission to participate in the study. All participants signed informed letters of consent, the adolescents assented, and the parents (or tutors) consented. This study was approved by the Pontifical Catholic University of Rio Grande do Sul Ethics Committee (CAAE: 48681015.6.0000.5336).

The sessions with parents or other family members were conducted on Sundays, during their visit days. The parents who agreed to participate were included in the study. Due to the participants' poor economic conditions, many parents do not visit their children frequently.

In the clinical sample, the diagnosis of substance use disorder was established by the therapeutic community psychologist, who also answered the sociodemographic questionnaire about the participants. All the adolescents filled out the DUSI and SOCRATES measures and the parents answered the ASSIST questionnaire, both in an assessment session at the base line. The SOCRATES was also applied in the post-test meeting.

Regarding the therapeutic community rules, we had to conduct the conditions assigned to the adolescents' sessions with all the adolescents. In other words, the GA and GAP ($n= 22$) were tested together. The sessions were conducted by one therapist who has experience working with adolescents and knowledge of the protocol's interventions.

Regarding the follow-up, we evaluated in the post-test the participants after a month, as the original protocol instruction, and after 6 months. Therefore, after this period (6 months), we could not assess the adolescents who performed the evaluation, so we asked the therapeutic community psychologist about the adolescents' treatment situation. The professional, blinded about the conditions, answered if each adolescent, after 6 months, presented: a) clinical discharge; b) relapse; c) adherence; or d) no adherence. We demonstrated the phases implemented in our study (Figure 1) based on the Consort flow diagram 2010 (<http://www.consort-statement.org/>).

DESCRIPTION OF THE INTERVENTION PROGRAM

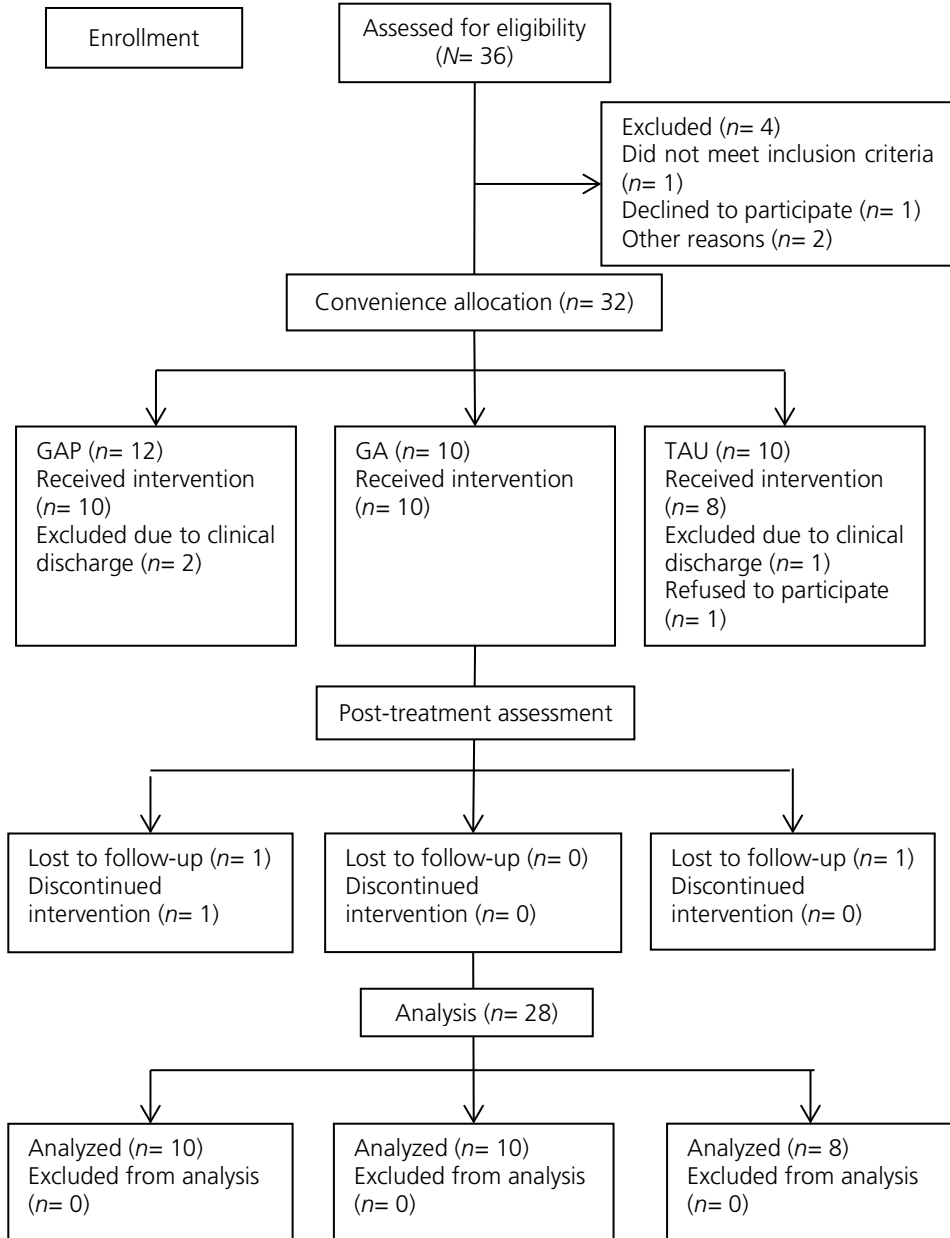
The brief intervention is a 4-session protocol for adolescent and parents and was tested in this study in a group therapy version. The sessions last from 60 minutes to 1h30min. The first and third sessions are for adolescents only. The second session is for parents only. And the fourth session is for adolescents and parents together. The three first sessions are delivered once a week, separated by 7 days, and the 4th session is the follow-up, that is, after one month (Winters et al., 2006; Winters et al., 2012). The conditions GA and GAP receive the same sessions 1 and 3.

The first session (adolescent only) focuses on identifying: a) activating events for drug use; b) examining irrational beliefs about the activating events; c) exploring the pros and cons of the problematic behavior; and d) reflecting on alternative activities aside from the drug use. The session with parents proposes: a) developing effective parenting behaviors; b) examining parental knowledge and personal attitudes towards drug use; and c) discussing risk and protective factors in adolescence. The third session, with adolescents only, is about developing problem solving skills to apply in high-risk situations and expanding positive coping. Then, the fourth session, with parents and adolescents, regards their interaction and

effective communication, aiming for a good family relationship to provide responsibility for the treatment goals (Winters et al., 2006).

Figure 1

Study phases based on Consort 2010 flow diagram



Setting

The therapeutic community is a long-term residential treatment for adolescents with substance use disorder, which allows boys only. The therapeutic program lasts from nine to 12 months and is divided into three phases: 1) detoxification (1st - 3rd month); 2) abstinence support (4th - 6th month); and 3) social reintegration or "graduation" (7th - 9th month) - this is the moment to leave treatment and return home after completing the program. The adolescents come for treatment, in most cases, by Court order or by family request.

Data analysis

The analysis was developed in Statistical Package for Social Sciences Program for Windows, version 22.0. A 5% significance level was employed. Descriptive analyses (*M*, *SD*, *n*, %) were used to describe the characteristics of the conditions. Pre- and post-test were compared across groups through Pearson's χ^2 .

Furthermore, the Clinical Significance was estimated and analyzed in three steps (Sheldrick et al., 2001): 1) Calculating the Reliable Change Index (RCI) (Abramowitz, 1998; Sheldrick et al., 2001); 2) The range of functional population based on the standard deviation was used to compare with conditions means. The conditions means are situated in the functional population's means range (\pm *SD*) to interpret the functional direction (Kendall et al., 1999); and 3) Calculating the effect size by Hedge's *g* in the range of a functional population to prove there was no statistical difference between the GAP and functional population improvements (Hedges & Olkin, 1985). We interpreted the *g* values based on Cohen's recommendation: (≥ 0.2) small, (≥ 0.5) medium, (≥ 0.8) large (Cohen, 1988). For the second and third steps, the mean and standard deviation of Taking Steps post-treatment outcomes were compared with the sample of adolescents continuously abstinence following treatment (Doerfler et al., 2016).

Results

Pre- and post-test motivation outcomes compared across conditions

No significant pre-test differences in the AmRec subscale were found between the conditions, whereas GAP, GA and TAU presented similar frequencies. The GAP Group presented superior frequencies and higher outcomes in the post-test, compared with the pre-test, as depicted in Table 2. However, these differences did not reach the statistical level ($p > .05$). Toward the subscale Taking Steps, a similar pattern was found (Table 2). However, GAP presented higher outcomes than other groups in the posttest and this difference reached the statistical level, $\chi^2_{(2)} = 6.13$, $p = .04$. Regarding the pre-test, differences did not reach the statistical level ($p > .05$).

Table 2
Conditions and pre-posttest outcomes

Conditions		SOCRATES Scoring*					Total
		Very Low	Low	Medium	High	Very High	
AmRec		<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Pretest	GAP	2 (7.1)	-	1 (3.6)	1 (3.6)	6 (21.4)	10 (35.7)
	GA	2 (7.1)	1 (3.6)	-	1 (3.6)	6 (21.4)	10 (35.7)
	TAU	2 (7.1)	-	-	2 (7.1)	4 (14.3)	8 (28.6)
	Total	6 (21.4)	1 (3.6)	1 (3.6)	4(14.3)	16 (57.1)	28 (100.0)
Posttest	GAP	-	-	1 (3.6)	-	9 (32.1)	10 (35.7)
	GA	4 (14.3)	1 (3.6)	-	-	5 (17.9)	10 (35.7)
	TAU	3 (10.7)	1 (3.6)	-	1 (3.6)	3 (10.7)	8 (28.6)
	Total	7 (25.0)	2 (7.1)	1 (3.6)	1 (3.6)	17 (60.7)	28 (100.0)
Taking Steps							
Pretest	GAP	-	-	-	1 (3.6)	9 (32.1)	10 (35.7)
	GA	-	1 (3.6)	-	-	9 (32.1)	10 (35.7)
	TAU	1 (3.6)	1 (3.6)	-	1 (3.6)	5 (17.9)	8 (28.6)
	Total	1 (3.6)	2 (7.1)	-	2 (7.1)	23 (82.1)	28 (100.0)
Posttest	GAP	-	-	-	-	10 (35.7)	10 (35.7)
	GA	3 (10.7)	-	-	-	7 (25.0)	10 (35.7)
	TAU	4 (14.3)	-	-	-	4 (14.3)	8 (28.6)
	Total	7 (25.0)	-	-	-	21 (75.0)	28 (100.0)

Notes: AmRec= Ambivalence-Recognition; GAP= Adolescent and parent group; GA= Adolescent group; TAU= Treatment as usual. Pre-posttest were compared across group through Pearson's χ^2 ($p \leq .05$). *Based on the categorical classification for the Brazilian population by Figlie (2004).

Clinical Significance of Taking Steps

The clinical significance was based on the Taking Steps (SOCRATES) means in discharge outcomes by adolescents if continuously abstinent following treatment (Doerfler et al., 2016). These groups presented a Taking Steps score ($M= 31.2$, $SD= 6.17$) in the admission, and a Taking Steps score ($M= 35.1$, $SD= 5.10$) in the treatment discharge (Doerfler et al., 2016). The results of the clinical significance analysis are shown in Table 3.

When comparing the clinical significance in all conditions in this study with the functional group, the GAP condition presented a medium effect size that represented better results than the functional sample. When comparing other conditions, the results demonstrated that the GA post-test means were within the normal range, but those of TAU were not.

Table 3
Clinical significance change across conditions in Taking Steps (SOCRATES)

Conditions	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>	FS <i>M (SD)</i>	RCI (<i>n= 482</i>)	Hedges' <i>g</i>
GAP (<i>n= 10</i>)	35.1 (3.51)	36.6 (3.31) ^a	35.1 (5.10)	5.24**	0.66
GA (<i>n= 10</i>)	34.9 (3.96)	31.0 (9.21) ^a	35.1 (5.10)	-	-
TAU (<i>n= 08</i>)	30.1 (7.75)	29.8 (10.63) ^b	35.1 (5.10)	-	-

Note: GAP= Adolescent and parent group; GA= Adolescent group; TAU= Treatment as usual; FS= functional sample; RCI= reliable change index; **Significance Reliable Change Index – RCI values (RCI> 1.96; 95%; Sheldrick et al., 2001); *g*= effect size by Hedge's *g* (medium).
^aWithin the normal range; ^bout of the normal range.

In order to analyze the clinical effectiveness of each treatment condition, we observed that the post-treatment changes produced by the GAP condition were completely reliable. We calculated the Reliable Change Index (RCI) and obtained a 95-98% reliability index for the Taking Steps measures, which were better than the functional population scores. In contrast, GA and TAU participants did not show clinically significant improvement at the post-treatment assessment, since no reliable change occurred (see the Hedges' *g* effect size in Table 3).

6-month follow-up

Based on a therapeutic community psychologist assessment of the adolescents' situation after 06 months, we observed in the GAP: clinical discharge (*n= 4*, 40%), relapse (*n= 1*, 10%), no adherence (*n= 1*, 10%) and adherence (*n= 4*, 40%). In the GA: clinical discharge (*n= 3*, 30%), relapse (*n= 2*, 20%), no adherence (*n= 4*, 40%) and adherence (*n= 1*, 10%). And in the TAU: clinical discharge (*n= 2*, 25%), relapse (*n= 1*, 12.5%), no adherence (*n= 3*, 37.5%) and adherence (*n= 2*, 25%).

Discussion

This pilot study aimed to demonstrate the feasibility of the adolescent and parents' brief intervention protocol (Winters et al., 2006) in the Brazilian adolescent context and a group version. The main result of this study showed improvements in the brief intervention protocol for adolescents and parents. Compared with other conditions, the group that received the protocol sessions demonstrated better results in post-test outcomes. The results, with superior outcomes in GAP condition, were similar to the original protocol studies (Winters & Leitten, 2007; Winters et al., 2012). In addition, the result regarding the adolescents' treatment situation after 06 months might indicate that GAP was in better circumstances than other conditions. These results agree with other studies that suggested the efficacy of family-based approaches for adolescent drug use treatment (Hogue & Liddle, 2009; Koning et al.,

2009; Liddle et al., 2008; Robbins et al., 2011; Stanger et al., 2009; Slesnick & Prestopnik, 2005).

Motivation was our dependent variable since the sample was composed of residential treatment adolescents who received medically assisted detoxification. Also, the motivation or readiness to change is fundamental in drug use treatment (Miller & Rollnick, 2013). In order to assess this construct, SOCRATES questionnaire was performed. SOCRATES is a popular instrument in investigating the Motivation of drug users (Bertholet et al., 2009). Utilized in studies with adolescent samples (Doefler et al., 2016; King et al., 2009; Maisto et al., 2003; Maisto et al., 2011), and specifically using the subscale Taking Steps, it demonstrates good outcomes with this population (Carey et al., 2001; Hall et al., 2014). Our results were similar since we found significant post-test improvement only in this subscale. Additionally, we consider that our results are associated with the protocol's objective. The brief intervention is intended, essentially, to change the behavior.

Even though this is a pilot study, we want to highlight that since we applied the protocol in a therapeutic community, the sample was composed of a clinical population. In this context, we found a sample that was different from the original sample in which the protocol was tested, since there are many adolescents with serious drug use problems, low educational levels, justice problems, and poor family support. Thus, our study was original and relevant since it proved the brief intervention protocol is adequate in this context. In the same way, a recent study with the brief intervention protocol showed that the long-term efficacy was associated with a mild to moderate substance abuse problems (Abedi, Reardon, Winters, & Lee, 2019). Furthermore, other family-based treatments are indicated for behavioral problems in comorbidity with substance use disorder (Liddle et al., 2008; Sheidow & Henggeler, 2012).

Considering our small sample, we had some difficulties in implementing the same design as the original studies. The impossibility of not realizing the randomized assignment could be considered an important limitation of our study. The decrease in the TAU group from the pre-test to the post-test in both measures may be influenced by the pre-existence of lower motivation and investment in the participants who were assigned to this group, since they were not present, for various reasons, in the first protocol session. This limitation is an important aspect of this study and could be essential in other researches that aim to develop a similar study in a Brazilian-like context, using the same protocol but with a major sample and randomized conditions.

Therefore, the analysis plan was executed for a non-parametric sample. In order to certify that our outcomes were significant, clinical significance analysis was performed. This analysis is recommended to identify meaningful changes that are not detected in standard analysis (Jacobson & Truax, 1991). In addition, we used the Hedge's *g* to predict the effect size, since *g* is considered better for small samples than Cohen's *d* (Grissom & Kim, 2005; Hedges & Olkin, 1985).

Furthermore, our sample was mostly performed by boys. As they comprise a higher proportion of men with substance use disorder, the results would only be generalizable to male gender with high drug use problems and law infractions. Moreover, although it was positive to compare the conditions' characteristics, but the results did not represent the girls' sample. Despite this limitation, literature shows the importance to conduct different interventions to boys and girls with substance use disorders (NIDA, 2014a). In addition, the access to the boys' sample was easier than girls' sample since the male gender corresponds to 87% of residential treatment in Brazil (Duarte et al., 2009).

Important directions for future research include having a larger sample to test the protocol's efficacy through a randomized clinical trial. Another aspect is to apply this brief intervention protocol to a girls' sample and in adolescents without severe problems drug use to compare results and test the protocol feasibility after the adaptation to the Brazilian context. Furthermore, it may be interesting to propose a protocol revision to include contextual therapy strategies (Flujas-Contreras et al., 2020).

In conclusion, considering that our study has a clinical implication, the results are showing that the use of family approaches is viable to treat adolescents in a context such as Brazil. Also, besides this result from a pilot study, results suggest that brief intervention can be applied in Brazilian adolescents' reality and in a clinical sample.

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