

Factors involved in changing drug use behavior in adolescence: A case study¹

Fatores envolvidos na mudança de comportamento de uso de drogas na adolescência: Estudo de caso

Factores involucrados en el cambio del comportamiento del consumo de drogas en la adolescencia: Un estudio de caso portugués

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ABSTRACT

This case study presents some factors involved in modulating the behaviors of a drug using adolescent. Therefore, the adolescent's and a family member's levels of self-efficacy and hope were assessed, whereas both received a brief intervention for adolescent drug use with parent sessions. The adolescent's drug use and motivation were also investigated. The main results indicate that the adolescent showed less motivation at follow-up concerning actions, although his ambivalence and his awareness regarding drug use problems increased. The adolescent lapsed back to tobacco use, albeit presented a structured routine at 14 months after the posttest. Based on the results, when considering the importance to improve positive aspects in adolescence, in order to do so, their caretakers should also be supported.

Keywords: motivation, drug use in adolescence, self-efficacy, hope

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RESUMO

Este estudo de caso apresenta alguns fatores envolvidos na mudança de comportamento de um adolescente usuário de drogas. Para tanto, foram avaliados longitudinalmente os níveis de autoeficácia e de esperança do adolescente e de um familiar, sendo que ambos receberam uma intervenção breve para tratamento do uso de drogas para adolescentes com sessões para os pais. O uso de drogas e a motivação do adolescente também foram investigados. O adolescente apresentou menos motivação no *follow-up* no que diz respeito às ações, porém aumentou sua ambivalência e reconhecimento quanto aos problemas relacionados ao uso. O adolescente voltou a usar tabaco, mas apresenta uma rotina mais estruturada após 14 meses do pós-teste. A partir dos resultados, salienta-se a importância de trabalhar com os aspectos positivos na adolescência e que, para tanto, os cuidadores também devem estar sendo acompanhados.

Palavras-chave: motivação, uso de substâncias psicoativas na adolescência, autoeficácia, esperança

RESUMEN

Este estudio de caso presenta algunos factores involucrados en el cambio de comportamiento de un adolescente usuario de drogas. Para ello, se evaluaron longitudinalmente los niveles de Autoeficacia y de Esperanza del adolescente y de un familiar, siendo que ambos recibieron una intervención breve para el tratamiento del uso de drogas para adolescentes con sesiones para los padres. El uso de drogas y la motivación del adolescente también fueron investigados. El adolescente presentó menos motivación en el seguimiento, en lo que se refiere a las Acciones, pero aumentó su ambivalencia y reconocimiento en cuanto a los problemas relacionados al uso. El adolescente volvió a usar tabaco, pero presenta una rutina más estructurada después de 14 meses del post-test. A partir de los resultados, se destaca la importancia de trabajar con los aspectos positivos en la adolescencia, y que, para ello, los cuidadores deben estar siendo acompañados también.

Palabras clave: la motivación, consumo de sustancias psicoactivas en la adolescencia, autoeficacia, esperanza

INTRODUCTION

There are many ways and reasons that influence change (Miller & Rollnick, 2001). To motivate a patient who presents drug use problems is considered a challenge to professionals, and the lack of motivation is an intrinsic part of the process (Miller & Rollnick, 2013). Some of the principles of motivational interviewing propose minimizing this variable's impact, whereas the therapeutic relationship exerts an important influence in the patient's motivation (Rollnick, Miller, & Butler, 2009).

When dealing with the adolescent's motivation to change drug use behaviors, the challenge is even greater because, at this stage in life, many variables can hinder the adolescent's motivation for treatment

(National Institute on Drug Abuse [Nida], 2014). Sustaining abstinence is a way to confirm the patient's adherence to treatment. Adherence can also be verified by the completion of therapeutic interventions' tasks and compliance with the sessions and the setting's agreements and rules (Scaduto & Barbieri, 2009).

To ensure a better likelihood that the adolescent will adhere to treatment, some characteristics are essential for the intervention. First, the intervention must be adapted to the adolescent's context, considering the main aspects of this stage in life. It's also important to understand the adolescent, hence identifying his/her main characteristics beyond the drug use. Moreover, when treating adolescents, it is

essential that the patient's family participate, since the objective is to improve communication between family members and to stimulate attitudes that favor abstinence (Nida, 2014).

As mentioned before, some characteristic traits of adolescence should also be taken into consideration in drug use treatments. The way they cope with adversity and challenges is a fundamental aspect of behavioral change. Self-efficacy beliefs are intimately connected to one's motivation and performance (Bandura, 2004). Even when aware of the impairments related to substance use, which is an important step towards behavioral change, self-efficacy beliefs that one is capable of accomplishing the behavioral change is an essential factor in modifying this detrimental habit (Bandura & Locke, 2003). Additionally, self-efficacy beliefs in the family also contribute to a better relationship and engender more monitoring by the parents (Bandura, 2006).

Hope is another important aspect of the drug use in adolescence issue. Having high levels of hope during adolescence is related to a better development for the adolescent (Esteves, Scoloveno, Mahat, Yarcheski, & Scoloveno, 2013). It is known that the adolescent's hope level can be mediated by his/her environment and by significant persons at this stage in life (Snyder, Cheavens, & Simpson, 1997). Additionally, hope, in adolescents, works as a mediator of the parent-children relationship and urges pro-social and positive behaviors in adolescents (Padilha-Walker, Hardy, & Christensen, 2011).

The objectives of this study were: 1) to assess longitudinal factors involved in behavioral change by a drug-using adolescent who received a brief intervention along with a guardian; 2) to test the drug use, hope, and self-efficacy of the adolescent and his guardian at pretest and follow-up; 3) to examine the motivation of the adolescent towards

changing drug use behaviors at pretest, posttest, and follow-up.

METHOD

Design

Longitudinal and descriptive case study.

Participants

A male adolescent and his guardian – his older sister – participated in the study. The adolescent was referred to temporary home-care in a therapeutic community (TC), which was specific for boys up to 18 years old who presented drug use problems. Most of the adolescents are referred to this location by court order, for committing a crime, or by the health system, which verifies whether the adolescent needs a different environment to receive treatment. In this case study, the adolescent was brought to treatment by his family.

The adolescent, whom will be referred to as P., was receiving, simultaneously to treatment, psychiatric and individual psychological care at the TC. The adolescent was selected for this study for meeting the following criteria: a) presenting drug use problems of mild to moderate severity; b) presenting a good level of writing and reading, determined by his level of education; c) not having any reports of psychotic symptoms in his medical records; d) presenting a parent/guardian who would attend the parent sessions.

P. answered the pretest during his first month at the TC. He was 17 years old at the time, studied at a public school, and was at the first year of high school. However, when he enrolled at the TC, he had abandoned school and did not have a standardized routine. The adolescent had committed a felony for drug smuggling and had never been in a treatment for drug use. He is a polydrug user, who presented cocaine use, and his favorite drugs were marijuana

and tobacco. The risk of drugs use was detected in his responses (De Micheli & Formigoni, 2002).

His father is deceased, and his mother is an elderly – the age disparity between mother and son appeared to engender many conflicts in the dyad. The older sister attended to the sessions of the study and is the person who the adolescent trusts the most, albeit, in the moment of admission, the adolescent was aloof with his sister because she suspected he was using drugs. The mother is an abstinent smoker since her son started treating his drug use. P.'s mother adopted permissive attitudes towards his behaviors, not imposing any rules or routine on him.

Instruments

(a) *Drug use screening inventory – Dusi* (De Micheli & Formigoni, 2000; De Micheli & Formigoni, 2002; Tarter, 1990). The table for frequency of substance use in the last month was employed to screen for drug use, along with fifteen “yes” or “no” questions about substance use (craving, tolerance, and abstinence). Next, the absolute density of problems was calculated, and the mean for experimental use is 0 to 13%, risky use is 20 to 46.5% and dependence is 53 to 100% (Fidalgo & De Micheli, 2016). The average time to fill the forms was between 3 to 5 minutes. The Cronbach's Alpha was 0.99 for the substance use scale in a study by De Micheli and Formigoni (2002).

(b) *Alcohol, smoking and substance involvement screening test – Assist* (Henrique, Micheli, De Lacerda, De Lacerda, & Formigoni, 2004). The test was employed to screen for alcohol, tobacco, and other substance use in adults. It has eight questions about drug use frequency, in life and in the last three months, and the association between the individual and nine classes of psychoactive substances. The score is interpreted by the risk of problems or dependence caused by drug use: low (alcohol: 0 to 10; other substances: 0 to 3), moderate (alcohol: 11

to 26; other substances: 4 to 26), and high (27 or more) (Formigoni, 2016). The reliability of the instrument in a study conducted in the Brazilian context shows a Cronbach's Alpha higher than 0.79 in the drug classes (Henrique et al., 2004).

(c) *Stages of change readiness and treatment eagerness scale – Socrates 8* (Figlie, Dunn, & Laranjeira, 2004; Miller & Tonigan, 1996). The scale composed by nineteen affirmatives scores by a five-point scale, and its application lasts for around three minutes. The scale's sub-factors reliability, in the Brazilian version, is: Ambivalence-Recognition – AmRec ($\alpha = .86$) and Action ($\alpha = .71$) measured in Figlie, Dunn, and Laranjeira's (2004) study.

(d) *Dispositional hope scale (Escala de esperança disposicional; Pacico & Bastinello, 2014; Pacico, Zanon, Bastinello, & Hutz, 2011)*. It contains twelve items (e.g., “Eu posso pensar em muitas formas de conseguir as coisas que são muito importantes para minha vida”/ “I can think of many ways to achieve things that are very important in my life” [free translation]) scored by a five-point scale. The internal consistency was .83, measured in Pacico, Zanon, Bastinello, and Hutz's (2011) study.

(e) *General self-efficacy scale (Escala de autoeficácia geral; Pacico, Ferraz, & Hutz, 2014)*. It's composed by twenty items (e.g., “Quando faço planos, sei que posso fazer com que eles deem certo”/ “When I make plans, I know I can make them work” [free translation]) and is scored in a five-point scale, whereas six items are scored reversely (08, 11, 13, 16, 18, and 20). The scale is validated for individuals between 17 and 80 years old. The mean scores for females and males are, respectively, 72.2 (DP = 11.1) and 75.9 (DP = 9.6). The scale presents a good reliability ($\alpha = 0.89$) in a study conducted by Pacico, Ferraz, and Hutz (2014).

Treatment

(a) *Brief intervention for adolescents and parents* [BI-AP] (Cerutti, Fernandes, Dacroce, & Argimon, 2017; Winters et al., 2006). The brief intervention protocol is designed for adolescents aged between 12 and 19 years who use alcohol and/or other drugs. The protocol comprises interventions adapted for adolescents based in the stages of change theory, the motivational interview, and the cognitive behavioral therapy.

Each session consists of 1h to 1h30; The first three sessions are employed weekly, and the last session occurs a month after the third. The first session occurs with the adolescent, the second with the parents/guardian, the third with the adolescent again, and the fourth with both (parents/guardian + adolescents). The objectives of the adolescent sessions comprehend working their beliefs regarding drug use and alcohol and/or other drug's abstinence, problem solving, and the development of coping skills. In the parent session, the focus is on parental attitudes, monitoring, and rules for substance use at home. The session for both parent-adolescent encourages effective communication between the two.

(b) *Therapeutic community treatment*. P. received treatment from a multidisciplinary team (personal and group) at a restricted location designed for male adolescents only. The treatment lasts for twelve months and is divided into three stages: the first stage focuses on detoxification, the second focuses on psycho-education and motivation, and the third focuses on the adolescent's social reintegration. This entire process is evaluated by the CT psychologist, who decides when patients are well into the next stage. The treatment at the TC has a religious bias and endeavors driving the adolescent away from the context in which he lived, and which exposed him to risks. The development of personal and social skills is encouraged by attributing certain

responsibilities to each patient. The TC demands that parents who wish to visit the adolescents participate in at least one event destined to the families of substance users.

Procedures

The adolescent's guardian signed the consent form authorizing the enrollment of P. in the study. The adolescent assented his participation by signing the assent form. The study followed the ethical instructions and was authorized by the ethical committee of the local college (CAAE: 48681015.6.0000.5336).

The interventions received by the adolescent comprised multidisciplinary and psychological health-care. The BI-AP sessions were delivered in group format. The adolescent and his sister participated in all the scheduled meetings.

At pretest, before employing the BI-AP protocol, the adolescent was in the detoxification stage of the TC. Thus, he was not presenting licit or illicit substance use, only drugs prescribed by a medical doctor. At this stage, P. reported his substance use and his motivation to change his drug-use behavior. Furthermore, his self-efficacy and hope were assessed. His sister reported her own use of alcohol and/or other drugs and her self-efficacy and hope beliefs.

The adolescent reported his motivation again after the BI-AP and at follow-up. Because self-efficacy and hope were considered to be significantly stable in the period between pre and post-test, they were only assessed again fourteen months after posttest. The questionnaire addressing substance use was also employed again only at follow-up, because the adolescent was still being treated at the TC at posttest and, therefore, had his access to drugs being monitored. The adolescent's sister also reported about her drug use, self-efficacy, and hope at pretest and after fourteen months.

In order to investigate P.’s adherence to treatment, six months after the BI-AP the local psychologist was interviewed about the adolescent’s situation in treatment. After fourteen months, P., his mother, and his sister were called by phone to examine the adolescent’s situation over one year after posttest.

RESULTS

Drug use, self-efficacy, and hope assessments

Table 1 shows the pretest and follow-up (fourteen months after the posttest) means of the adolescent’ and his guardian’s self-efficacy, hope, and severity

of drug use variables. At follow-up, P. reported that he had used tobacco in the previous month, and, as shown by the results, the severity of drug use remained moderate, in which the mean increased since the pretest. The adolescent’s self-efficacy remained high, although its mean lowered since the first assessment. His hope remained high at follow-up. Furthermore, the sister’s self-efficacy and hope means, in which self-efficacy was already low at pretest, were even lower at follow-up. Her hope mean was high at pretest and lowered after fourteen months. Her alcohol use and/or other substances presented low risk at both assessments.

Table 1
Assessments of drug use, self-efficacy, and hope at pretest and follow-up

Clinical Data	Assessments	
	Pretest	Follow-up (14 months)
<i>Severity of drug use^{a,b}</i>		
Adolescent*	40	47
Guardian**	<03	<03
<i>Self-Efficacy^c</i>		
Adolescent	88	80
Guardian	62	54
<i>Hope^d</i>		
Adolescent	37	38
Guardian	32	27

Note. *DUSI; **ASSIST. ^a DUSI Absolute Density; experimental use = 0 to 13%; risky use = 20 to 46.5%; dependence = 53 to 100% (Fidalgo & De Micheli, 2016). ^b ASSIST: Risk: Low (alcohol: 0 to 10; other drugs: 0 to 3); moderate (alcohol: 11 to 26; other drugs: 4 to 26); and high (27 or more) (Formigoni, 2016). ^c Self-Efficacy (Men): M = 75.9 (SD = 9.6), (Women): M = 72.2 (SD = 11.1) (Pacico, Ferraz, & Hutz, 2014). ^d Hope (14-36 years old): M = 31.6 (SD = 4.4) (Pacico & Bastinello, 2014).

Assessments addressing the motivation to behavioral change

From pretest to follow-up, P. presented a higher mean in the action score during pretest (M = 38), reducing subsequently as follows: posttest (M = 32) and follow-up (M = 28). The mean for ambivalence and recognition (AmRec) increased in the subsequent assessments: pretest (M = 36), posttest (M = 41), and follow-up (M = 50).

Adherence to treatment

Six months after the brief intervention, P. was abstinent and had received medical discharge. Fourteen months after the posttest, the adolescent

was studying and working in reverse shifts. However, he did not receive any clinical care since he finished his treatment at the TC. According to the results, P. and his family did not continue attending the treatment at Psychosocial Care Center for Alcohol and Drugs (Caps ad), and the adolescent did not maintain his abstinence to any non-prescribed drug, including alcohol and tobacco, as indicated by his discharge in the TC. The adolescent reported that, in order to avoid some risky behaviors he had before being admitted in the TC, he was trying to “keep his mind occupied”, heading home after work “low on energy”. Likewise, he reports finding new companions and getting closer to his family.

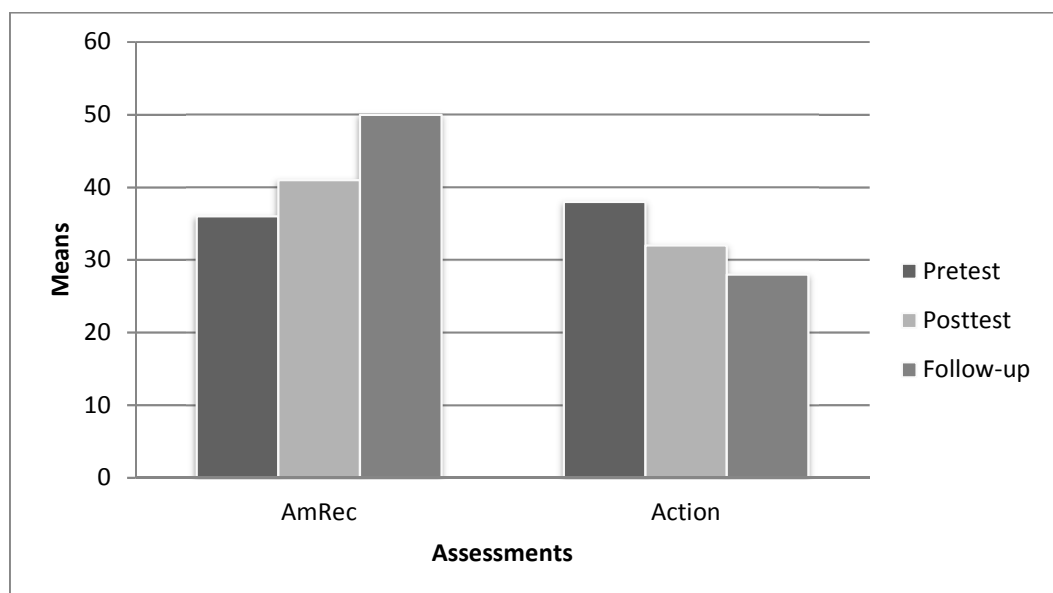


Figure 1. Assessments addressing the adolescent's motivation

DISCUSSION AND CONCLUSION

The main objective of the study was to discuss, by examining a case, factors that modulate behavioral change in drug-using adolescents. Therefore, the importance of this study lies in the longitudinal assessment of an adolescent and his guardian. Both received a brief intervention with parent sessions to treat alcohol and/or other drug use in adolescents. Literature has presented positive results regarding family-based treatments (Szapocznik & Williams, 2000; Hogue & Liddle, 2009; Cerutti, Bastos, & Argimon, 2018). Additionally, the fact that it is a brief intervention adapted for adolescents (Winters, Leitten, Wagner, & Tevyaw, 2007) also highlights the importance of this study.

Results regarding the motivation to change drug-use behaviors indicate that P. increased his awareness about his problematic drug use and his need to do something about it. Furthermore, the participant started pondering more about this problem, as indicated by his high scores at the AmRec sub-scale. The reduction in the action sub-scale might indicate that his attitude towards behavioral change diminished when he lapsed back to tobacco use, and, therefore, presented an increase in the severity

of drug use mean (Miller & Tonigan, 1996; Miller & Rollnick, 2013).

P. had risk behaviors at the beginning of treatment, such as drug smuggling, and is currently studying and officially working, no longer engaged in smuggling. The risk reduction is an important progress in P.'s treatment, since the brief intervention focuses mostly on reducing the risks associated with drug use during adolescence (Winters et al., 2006).

P. presented high levels of self-efficacy and hope during both assessments. Data shows a reduction in the self-efficacy mean and stability in the hope mean as time passed by. The higher perception of self-efficacy is associated with a higher motivation, which engenders behavioral change (Bandura, 2004). Hence, this reduction in the mean might be related to the tobacco relapse. Considering P.'s hope was above average, this trait might be related to the improvement in the adolescent's life status. The reduction of some risks that P. presented before the treatment might be associated with his hope perception, since the latter is related with problem prevention in adolescence development (Esteves et al., 2013).

The difficulty in abstaining from tobacco by P. might also be related to his mother's tobacco use. It is known that adolescents whose parents use tobacco have an increased chance of using tobacco and difficulties abstaining from it (Virtanen et al., 2009). Also, we know many adolescents choose tobacco to use "something" as they don't perceive it to be as risky as cocaine/marijuana/other illicit substances. However, the fact that P. relapsed in tobacco use indicates the need to reinstate the treatment (Nida, 2014).

P.'s sister, who attended the BI-AP meetings, was also assessed on her self-efficacy and hope beliefs at pretest and follow-up. The parent/guardian meetings focused on lecturing these caretakers about coping with the adolescent's drug use more effectively. It is possible to observe that the sister's self-efficacy was below average, although her hope level was high at the pretest. The self-efficacy's low mean repeated the adolescent's pattern, which suggests that this belief might be acquired in the family context (Bandura, 2006). Conversely, the sister presented lower means in both aspects at follow-up. The below average levels of self-efficacy and hope at follow-up suggest that the guardian needs aid in supporting the adolescent since a high level in both beliefs in the family engenders positive outcomes during adolescence (Bandura, 2006; Snyder, Cheavens, & Sympson, 1997).

The low self-efficacy belief is associated with the permissiveness presented by P.'s caretakers. The low self-efficacy belief presented by the sister might have hindered her determination in intervening in P.'s risk behaviors, which he presented before the treatment. Moreover, the adolescent demonstrated a low self-efficacy mean one year after finishing the treatment at the TC, which might indicate that the clinical care helped him perceive himself as more capable of self-improving and the lack of treatment would weaken this perception. The development of

self-efficacy beliefs during adolescence is modulated by external factors (Bandura, 2006).

The case study design does not allow generalizing the data collected to a general population. However, it is important to highlight that individual case studies can help understand some clinical phenomena in more details (American Psychological Association, 2006). In this study, it was possible to discuss more thoroughly the motivation and adherence of the adolescent to the treatment and the way he sustained his abstinence during this stage in the cycle of life.

In conclusion, the treatment received by P. allowed an improvement to his initial state regarding risk behaviors related to the use of illicit drugs. Another fact to be highlighted is that P.'s levels of hope might also have contributed to the clinical improvement. However, after over one year and without clinical care to help preserving his abstinence, the adolescent lapsed back to tobacco use and presented a reduction in his self-efficacy belief mean. The low means presented by P.'s sister, who received a brief intervention, suggest the need of more support to the families of drug-using adolescents.

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