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Social integration and substance use: Assessing the effects of an early intervention programme for youth

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Abstract

Aim. Appropriate social integration has been shown to be a protective factor against substance use among adolescents and associated negative consequences. Promoting social integration through early intervention with adolescents using substances is thus necessary and is the aim of the Identification, Assessment and Follow up of Adolescents with Substance Use (in French, DEPART) programme. The present study aimed to describe this programme and its participants from 2009 to 2013, as well as to assess its effects on social integration. **Methods.** Data from 398 adolescents using substances who attended the DEPART programme were analysed. **Results.** The results showed that almost 80% of the adolescents admitted to the DEPART programme were boys, with a large proportion using cannabis. Globally, social integration did not increase from admission to discharge from the program, but a shift was observed for school and professional integration. Additionally, after the intervention, we observed that social integration was more important in younger patients. **Conclusions.** This study showed that adolescents with problematic substance use mostly consumed soft drugs and that those who were integrated into the DEPART programme at a younger age were more likely to be socially integrated at the end of the programme.

Keywords: substance use, early intervention, social disruption, social integration

Introduction

Adolescence is marked by physical and psychological changes. This unstable state at a time when important decisions about the future have to be made may be experienced as stressful and anxiogenic leading to an enhanced risk for developing long-term psychological and behavioural disorders (1).

Substances (cannabis, alcohol, etc.) might then be used as a coping strategy to reduce stress and anxiety (1) and may be attractive as an off-limit experience. In adolescents aged from 11 to 15, the prevalence of alcohol use (at least once) is 70.4% for boys and 68.9% for girls, and the prevalence of cannabis use is 30.1% for boys and 19.2% for girls. Additionally, only 3% of these youth consumed medical drugs without a prescription, and very few consumed other substances(2). Although common in adolescence, substance use has deleterious consequences for many aspects of life, such as health (3, 4), school attendance (5), school performances (6), and relationships with peers or family (7) and may contribute to the development of psychiatric disorders (8-11).

From this perspective, protective factors and risk factors for substance use refer to individual, interpersonal and contextual factors. A literature review (12) suggested that limited monitoring by the parents, frequent nights out with friends and a weak link to school are important risk factors for alcohol and cannabis use. In contrast, social integration has been found to be an important protective factor against substance abuse (13). Indeed, it has been demonstrated that at-risk behaviours (including substance use) were more frequent when adolescents experienced school disruption (14), which lead to increased reintegration difficulties (15). Additionally, adolescents' vulnerability (defined by bad relationships with parents, little school involvement and lack of emotional well-being) was associated with increased substance use (16). If family relationships

are important for younger adolescents, peer relationships and school integration are essential for older adolescents (17). For instance, school success is thought to be a protective factor against substance use (18).

However, school achievement is not sufficient in itself. It is also important to promote secure and appropriate social relationships in general, and at school or in the apprenticeship environment in particular (19, 20). Feeling well when at school or at work and being able to express one's difficulties to teachers or colleagues has been shown to protect against substance use (21).

From a therapeutic point of view, early identification of substance use and early intervention can prevent the development of long term negative outcomes leading to chronic difficulties and drug addiction (22, 23). Therefore, providing help and support to youth when their substance use is still within the experimental phase could prevent school, social and professional disruptions. In this context, the "Identification, Assessment and Follow up of Adolescents with Substance Use" (in French, DEPART) programme was created to offer a specialized outpatient service for youth using substances. In particular, DEPART is a multidisciplinary programme involving professionals from the medical and social fields (24). This programme enables treatment of young drug consumers without exposing them to older drug addicts in the same unit to avoid identification with those older drug consumers and to promote constructive behaviours and social reintegration as the potential for change is still important at this age.

Thus, due to the importance of social integration as a protective factor against substance use (15, 19-21, 25), the main aim of the current study was to measure the impact of the DEPART intervention programme over a 5-year period on school and professional integration. The present study is the first to assess the efficacy of the DEPART programme.

Method

Study design and ethical considerations

This study used a retrospective observational design. Data were based on clinical records of all patients (N=398) attending the DEPART programme between 2009 and 2013. Patient consent could not be obtained as the study was retrospective. However, according to local regulations concerning research involving human participants, the local Ethics Committee of the State of Vaud (CER-VD 37/15) gave its approval for analysing those clinical data after anonymization.

Intervention

DEPART is a programme funded by the Public Health Department of the Swiss State of Vaud and is composed of 4 units distributed in different areas of the state for ease of accessibility for adolescents. It is composed of a multidisciplinary team of specialized educators, nurses, physicians and psychologists. The DEPART programme focuses on adolescents and their network including the educational, social, medical, psychological, scholarly, professional and legal domains. DEPART offers individualized care to youth between 12 and 20 years old and their relatives, especially when the youth shows a frank opposition to psychotherapy. In particular, DEPART proposes an assessment of 4 or 5 meetings with the youth, two professionals, and, typically, with members of the family. Usually, one professional focuses on the adolescent (i.e., internal reality) and the other on the family and the social network (i.e., external reality). The aim of DEPART is to promote the youth's well-being by a progressive and more appropriate social integration, in association with their regular mental health, socio-educational and professional support network. Second, the objective is to better understand the reasons why the adolescent uses substances in his/her daily-life and which factors brought her/him to consumption (e.g., absence of career plan or conflicting family relationships). After the assessment phase, depending on the clinical evolution, the patients can either leave the program, be redirected to more intensive psychiatric

care or other intervention measures, or they can continue the DEPART intervention. During the follow up, they can be redirected at any time. Figure 1 illustrates the possible time-course within the programme.

Measures

Social integration was rated by DEPART caregivers on a two-point system, as either present (1, attended school regularly or professional integration) or not (0). The types of social integration were grouped into three categories: “school” corresponding to regular school attendance, “professional” if the youth was already integrated in the professional world, and “supportive measures” referring to either measures helping the youth to define a career plan or medical measures focused on improving the youth’s social integration.

Substance use was evaluated at admission with the DEP-ADO (26), a self-report questionnaire, administered in a face-to-face setting that assesses use of alcohol and drugs in adolescents over the last 12 months before the session. For the present study, the French version of the DEP-ADO (27) was used. The sensitivity of the French version was 95.1%, and the specificity was 68.9%, when compared with the diagnosis by the M.I.N.I. (28). The scores are coded according to three categories: green (no problem), orange (emerging problem with desirable intervention) and red (important problem necessitating intervention) lights.

Procedure

Young consumers were contacted by relatives or contacted themselves by the caregivers of the DEPART programme for an assessment or treatment. Upon the first appointment, the clinicians investigated different aspects of the youth’s life through a non-structured interview, especially those related to consumption. Social integration and substance use were rated by the clinician at the end of the first appointment based upon the youth’s responses. Additionally, the DEP-ADO

was administered once at admission. At discharge, although the youth's social integration was rated again by the clinicians, their substance use was not explicitly assessed as the DEP-ADO assessed the consumption over the last 12 months, and the main focus of the DEPART programme is to promote the youth's social integration and to better understand the reasons for consumption (see table 1).

Data analyses

Descriptive statistics were provided for sociodemographic variables, for substance use and for who referred the youth to the programme (self, family, teachers, etc.). Then, we compared changes in terms of social integration from admission to discharge. Afterwards, we assessed the effect of the DEP-ADO (substance use) category on integration. Finally, we examined differences between youth who dropped out and those who finished the programme. Statistical analyses were conducted using χ^2 tests, Student's t-tests for independent samples or analysis of variances (ANOVA), as appropriate. The effect of sex was assessed in all analyses. Significance was set at $p < .05$.

Results

Description of the sample

The majority of patients in the DEPART programme (whole sample, N=398) were male (77.4%). Their average age was 17.10 years old (SD=1.73, Min=12, Max=23). The substances used by the adolescents are described in table 2. Mainly, the adolescents smoked cannabis, with 41.7% of the sample using cannabis more than 3 times per week. Adolescents were referred to the DEPART programme by parents or relatives (37.2%), through their socio-educational network (22.1%), through their school or professional network (13.8%), through law enforcement (7.8%), through their medical or psychiatric network (6.5%), themselves (7.5%), and through other entities (5.1%). The mean duration in the programme was of 8.27 months (*SD*=6.17; Min=0.5; Max=37.0). The

programme stopped at the first assessment (no follow-up) in 15.8% of cases, was followed by a reorientation after the assessment or during the follow-up in 13.8% of cases, or after a follow-up in 23.9%. Thus, 46.5% of the adolescents dropped out of the programme.

Social integration

First, a chi-square test revealed that, globally, the adolescents were equally integrated at discharge compared with integration at admission to the programme ($\chi^2(1)=2.65$, $p>.10$). More specifically, we observed a change in scholarly and professional integration from admission to discharge, ($\chi^2(4)=62.66$, $p\leq.001$).

No differences in social integration were observed in terms of sex, either at admission ($\chi^2(1)=0.20$, $p>.10$) or discharge ($\chi^2(1)=0.38$, $p>.10$). However, social integration varied significantly in terms of age. When comparing integration at admission ($t(180)=2.08$, $p<.05$), or at discharge ($t(311)=2.81$, $p<.01$), younger adolescents were more integrated than older ones. An ANOVA revealed a significant difference in age on the type of integration at admission ($F(2, 136)=33.70$, $p<.001$) and at discharge ($F(2, 221)=15.18$, $p<.001$); adolescents in school were younger than the adolescents in professional settings or using supportive measures.

It is worth noting that depending on the type of discharge, we observed significant differences in social integration (percentage of adolescents not integrated) at discharge (i.e., assessment without follow up, 8.6%; reorientation after assessment or during follow up, 25.9%; follow up, 18.08%; drop out, 41.08%; $\chi^2(3)=26.99$, $p\leq.001$), but not at admission ($\chi^2(3)=3.84$, $p>.10$). No differences were observed between the type of discharge and the type of integration (school, professional world or supportive measures).

DEP-ADO category

At admission, we observed a significant difference in integration according to the DEP-ADO category ($\chi^2(2)=13.05$, $p\leq.001$). One third (33.9%) of the adolescents categorised with a red light were not integrated compared with 13.5% with an orange light and none of the adolescents with a green light. The same difference was observed at discharge ($\chi^2(2)=20.48$, $p\leq.001$). One third (36.7%) of the adolescents with a red light were not integrated compared to 8.9% with an orange light and 12.2% of youth with a green light.

A significant difference was observed between the type of integration at admission ($\chi^2(4)=17.4$, $p\leq.01$) depending on the DEP-ADO category. Adolescents with green and orange light scores were predominantly in school (71.42%, 46.81%, respectively). For red light scores, adolescents were evenly divided between school and professional settings (36.58%). At discharge, significant differences were also observed in terms of type of integration (scholar, professional or supportive) ($\chi^2(4)=9.78$, $p<.05$). Adolescents with orange light scores were evenly divided between school and professional integration (40.81%), and we observed that adolescents with a red light were more often integrated into the professional world (53.08%) than into the scholarly one (25.92%).

No differences were observed in terms of type of programme discharge ($\chi^2(6)=9.51$, $p>.10$) or programme duration ($F(2, 257)=1.37$, $p>.10$) or sex ($\chi^2(2)=0.71$, $p>.10$) in relation to DEP-ADO category. A significant difference was observed in terms of age ($F(2, 240)=11.29$, $p<.001$). A post-hoc test with Bonferroni correction revealed that adolescents with a red light were older than adolescents with a green light ($p<.001$), who were also younger than adolescents with an orange light ($p=.047$).

Drop out

Regarding drop outs, the results revealed no differences between the adolescents who dropped out after the assessment phase compared with those who completed the programme in terms of age

($t(371)=1.76$, $p>.05$), sex ($\chi^2(1)=0.78$, $p>.10$), integration at admission, ($\chi^2(1)=1.82$, $p>.10$), type of integration (at admission, $\chi^2(3)=5.32$, $p>.10$, or discharge, $\chi^2(3)=5.88$, $p>.10$) or in terms of substance use severity (red, orange or green light) ($\chi^2(2)=5.33$, $p>.05$). The only significant difference was related to social integration at discharge ($\chi^2(1)=22.66$, $p\leq.001$). The adolescents who dropped out were more often not socially integrated (41.08%) compared with the adolescents who followed the programme until the end (17.47%).

Discussion

The current study aimed to assess the DEPART program, the population targeted by this specific intervention, and the program's benefits to social integration, an important protective factor for substance use and abuse (15, 19, 25).

Description of the population

Almost 80% of the adolescents admitted to the DEPART programme were boys, with a large proportion using cannabis. The small percentage of female adolescents was expected and is relatively consistent with studies investigating gender ratios in substance use(2). Generally, the family of the adolescent and his/her network (justice, social or mental health facilities) asked for his/her admission in the DEPART program, which we hypothesized to be related to the fact that the population treated by DEPART were mainly refusing care. More than half of the participants had problematic substance use (red light) that could lead to negative consequences in daily life (e.g., affecting relationships with family members, school or professional attendance, and legal offenses (e.g. 29)).

Social integration

First, we observed no differences in social integration from admission to discharge. Contrary to what was expected, this result was encouraging. Indeed, many adolescents were referred to the

programme because they were very close to the point of rupture with their social network and their relatives felt they urgently had to do something. Thus, the DEPART programme was able to keep them integrated in the social network. For example, clinicians organize meetings with professionals (e.g., teachers, social workers, judge) to preserve school integration or to set up appropriate interventions for the adolescent according to his difficulties. Sometimes clinicians need to create a professional network around the adolescent because his/her problems are too important to be treated only by himself and his parents.

The second main result of social integration was the shift from the school to professional setting, which is similar was previous results illustrating the importance of promoting secure and appropriate social relationships at school or in the apprenticeship environment (19, 20). Moreover, our results revealed that adolescents who were socially integrated had less problematic substance use (lower proportion of red light scores on DEP-ADO), which was consistent with previous studies (19, 20, 25).

More generally, to understand these results, it has to be mentioned that during adolescence, individual personality is shaken by pubertal psychosomatic changes. If the adolescent's personality is vulnerable, those losses of balance may exert pressure that potentially leads to psychological decompensation (psychotic or depressive symptomatology). To cope with changes, the adolescent's psyche will sometimes use maladaptive strategies, such as substance use. However, a positive activity could help strengthen the adolescent's personality and protect him/her from substance use. A positive social activity may expand the adolescent's world, leading to a defocalization from substances, which previously was their main daily concern. Moreover, involvement in a positive activity promotes physical well-being, concentration, awareness and arousal, which can lead to a decrease in substance use (30).

After the intervention, we observed that social integration was more important in younger patients. We hypothesized that when the individual was older when joining the intervention program, he had a longer history of substance use accompanied by many habits and years of social disruptions. Therefore, social reintegration away from daily consumption could be more challenging. Furthermore, social integration in adulthood requires more proactive behaviours than in adolescence, which can constitute an additional difficulty. Moreover, if substance consumption was important (DEP-ADO red light) when the adolescent started the intervention program, social reintegration was more complicated. Those adolescents were probably already marginalized and socially neglected, making it difficult to implement a useful and appropriate intervention in the long term. This result is important as it suggests that promoting early detection of substance use (for example in school) and early intervention is crucial. This is consistent with previous studies (22, 23).

Drop out

The rate of drop out was high (more than 45%). This is a point that needs to be addressed and improved in future studies. No specific patient profile that dropped out from the DEPART programme was identified. Furthermore, consistent with the results described above, the adolescents who dropped out of the programme were less socially integrated, which indicates again the importance of social integration as a protective factor in this context. Creating a strong therapeutic alliance in the long term with such adolescents is not an easy task and could partially explain the high rate of drop out.

Limitations

No diagnoses according to the DSM-IV were set at admission, which did not allow a study of psychiatric comorbidities. Substance use was only quantified using a dimensional measure, the

DEP-ADO. Additionally, no quantitative measure of substance use at discharge was assessed. Further studies should perhaps investigate the reduction in substance use during the programme in a more quantitative way. Additionally, further studies should adopt a more prospective design to compare the results to a control group (such as a waiting list).

Conclusion

Social integration and substance use in adolescence are important public health concerns. If consumption is detected and treated early in adolescence, the risk of school and professional disruption is reduced. The present results suggested that the DEPART intervention program, when starting at a younger age, helps adolescents using substances to stay within a social network. In contrast, promoting social integration is more challenging in older adolescents. Therefore, a special effort must be made in training professionals to detect adolescents' early substance use, as it is crucial for reaching a population often difficult to treat and resistant to regular psychiatric care.

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Table 1. Descriptive

Dimensions	Measures	Admission	Discharge
Substance use/ DEPADO	Green	17.4%	-
	Orange	26.4%	-
	Red	56.2%	-
Social integration	Scholar	48.7%	33.1%
	Professional	24.0%	43.5%
	Supportive measures	27.3%	23.4%

Table 2. Substance use

	Substance	N (%)
Primary substance	Cannabis	348 (87.4)
	Alcohol	25 (6.3)
	Multiple substance	11 (2.8)
	Video games	2 (0.5)
	Cocaine	1 (0.3)
	Hallucinogen	1 (0.3)
	Heroin	3(0.8)
	Missing	7 (1.2)
Secondary substance	Alcohol	62 (15.6)
	Cocaine	6 (1.5)
	Hallucinogene	4 (1.0)
	Heroin	4 (1.0)
	Not applicable	322 (80.9)

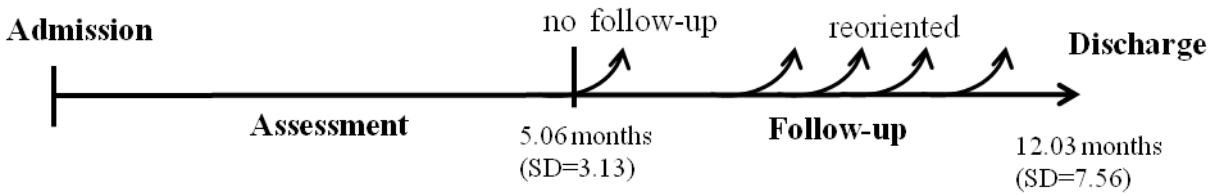

Figure 1. Illustration of the possible time-course of the program.