

Effectiveness of psychosocial care in school continuity of adolescents in social vulnerability

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Abstract

Objective: to study the effectiveness of a psychosocial care program in school continuity of adolescents in social vulnerability. **Methods:** this was a retrospective cohort study involving 200 adolescents assisted in a multidisciplinary intervention program with harm reduction approach, from 2007 to 2012; the intervention effect was assessed using Poisson regression models. **Results:** 200 adolescents were included in the program; 116 of them continued and 84 dropped it; 74.5% were attending school after six months, with a higher proportion among those who adhered to the intervention (RR=1.12 – 95%CI 1.01;1.27); and those who were studying when they joined the program (RR=8.52 – 95%CI 3.71;19.57). **Conclusion:** the evaluated program has a positive effect on rehabilitation and school continuity of adolescents in social vulnerability, but individual characteristics, such as being studying already, play a dominant role in the adherence to the program.

Key words: Adolescent; Social Vulnerability; Education; Health Promotion; Cohort Studies.

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Introduction

The adolescent population has been growing, worldwide.¹ This phenomenon coincides with the reduction of infectious diseases, malnutrition and infant mortality.^{2,3} During adolescence, risk behavior and negligence in taking care of their own health are observed,^{1,2,4} and it has a higher impact in situations where the citizenship rights are not guaranteed.^{1,5}

Adolescence, by itself, is characterized by some vulnerability situations, such as, teenage pregnancy, violence, and sexual abuse, use and abuse of alcohol and other drugs, which can further compromise their development when compared to other segments of the population.^{1,2,4,6} Such situations worsen when combined with social inequalities, such as poverty, low education level, area of residence, precarious supply of public institutions and services, among others.^{1,4}

Education is one of the strongest predictors of health.

In Brazil, since the approval of the Statute of Children and Adolescents, in 1990, there was significant progress toward universal access to primary education.¹ However, many children and adolescents have difficulty in learning or do not finish their studies, since the educational system also suffers from a crucial impact of social inequalities and vulnerabilities.¹ According to the United Nations Development Programme (UNDP), one in four students who begin elementary school drops out before finishing the last grade. Brazil has the third highest dropout rate – 24.3% – among the 100 countries with the highest human development index (HDI).⁷

Education is one of the strongest predictors of health.⁸⁻¹⁰ In addition to enhancing opportunities, education can also end the cycle of intergenerational poverty and provide sustainable development;^{8,9} it can allow the choice of healthy behaviors and the access to quality health care, besides offering supporting tools and resources to optimize individual health.⁸⁻¹⁰ Promoting the well-being of populations at risk and keeping them in contact with education opportunities can possibly contribute to overcoming inequalities in health outcomes.¹⁰ Partnership actions between health services and schools have excelled due to their contribution to health by compensating difficult

paths, which are linked to the health-disease process, and affect students' performance, which often lead to school dropout.^{10,11}

Education is considered a major vehicle to address the inequality of opportunities and results, so, keeping teenagers in school and ensuring the completion of their studies is essential to overcome, cope and reduce vulnerabilities.¹² In this perspective, interventions conducted in psychosocial care programs, especially dedicated to the reduction and prevention of vulnerabilities should evaluate and prioritize educational opportunities, including the insertion or guarantee of adolescents' continuity at school.

The objective of this study was to evaluate the effectiveness of psychosocial care for adolescents in social vulnerability focusing on their school situation.

Methods

This is a retrospective cohort study with adolescents who received the intervention of the Psychosocial Care Program (PAS) in the municipality of Caçapava, São Paulo State, in the period between September 2007 and December 2012. The inclusion criteria in PAS were: age between 11 and 18 years; family income up to two minimum wages; and voluntary participation.

This study focused on this specific PAS, which belonged to a non-governmental organization (NGO) that assisted adolescents of both sexes and their families in situations of social vulnerability. The studied PAS has the following purpose:

[...] to conduct preventive outpatient interventions in order to: assist, encourage and develop activities for health, social and education promotion for adolescents in situations of social vulnerability and risk.

Adolescents referral was conducted by the municipal service, and the work of the multidisciplinary team (social assistant, psychologist, educational psychologist/pedagogue, computer and carpentry teachers, manager and administrative staff) was based on the premises of the approach known as harm reduction.¹³ This approach focuses on (i) caused damage (instead of pathological behavior), (ii) respect for individuals and (iii) right of choice, guaranteed on voluntary participation whose acceptance is given by a mutual trust agreement, free of moral judgment. Such premises, besides being more attractive to adolescents, can reduce barriers, stigma and personal shame.¹³ After the screening, an

individualized intervention plan was conducted in order to meet the needs of each adolescent and their family, including the different approaches of care (social; psychological; psychopedagogical and/or pedagogical; familiar; and education workshops) and actions (home visits, school monitoring, medical referrals to adolescent health specialists, neurologist and psychiatrist, sports and cultural activities, and professional training and job market guidance). We calculated the average time (A) and standard deviation (SD) in months for each group, and the difference in the results between these groups was assessed by Student's t test. This procedure was conducted to see if the intervention was distributed differently in the two groups.

The following independent variables were used for analysis purposes:

- a) Family and/or guardian participation (no, yes), it was considered positive when there was participation in at least one individual care and family counseling group throughout the psychosocial care; in cases where the teenager lived in temporary shelters, the shelter professional was responsible for attending the sessions and participating in the guidance of the adolescent.
- b) Mental disorder (no, yes), it was considered positive when the teenager had already been through specialized evaluation or was in psychiatric care.
- c) Initial Complaint, (i) Family/social vulnerability (family conflict; mother or father drug users; domestic violence; family loss, family negligence, and social poverty or vulnerability), (ii) Disruptive behavior (behavior problems, aggressiveness, emotional instability, teenage pregnancy, use of alcohol and drugs, and difficulty in socializing), (iii) School problems (behavior problems, irregular attendance, school dropout, and learning difficulties).
- d) Gap in school-grade age (no, yes), it was calculated according to the criteria for expected schooling for age, established by the Brazilian Ministry of Education.¹⁴
- e) Poverty line (above, below), it was estimated based on the average household income per capita/day, converted to dollar according to the exchange rate of the month of data collection; individuals were considered to have income below the poverty line when it was less than USD 1.00/day.

The following information record of the adolescents referred to care in PAS was used as a source of information: identification of assistance; family; health and school situation; family income; reason and source of referral.

An additional questionnaire gathered information on psychosocial follow-up period: interventions; referrals; participation of parents and guardians; dropout from PAS; and school situation after six months of follow-up. In the case of the group that abandoned the intervention, information on their school situation after six months was obtained via contact with referral organization teams (e.g.: Guardianship Council, Departments of Citizenship and Education), responsible for the care and support of families of adolescents referred to PAS.

Statistical analyzes were carried out in two stages: first, we observed the factors associated with adherence (exposure) to PAS; in the second stage, we analyzed the effectiveness of joining the program in school continuity (outcome) after six months of participation in the intervention. These analyses were performed using the program Stata version 12, having as measure of association the relative risk (RR) and 95% confidence interval (95%CI), estimated by Poisson regression models with robust variance.¹⁵

The factors related to adherence to PAS were investigated using a model that included the following variables: age group; sex; area of residence; income; being studying when joining the program; expected schooling for age; declared complaint for the treatment; treatment monitoring by the family; and having mental disorder. The effectiveness of intervention in PAS for adolescents in social vulnerability was studied with a model that included variables whose bivariate analysis presented significance level of $p < 0.10$.

The study project was presented to the Research Ethics Committee of Unifesp/EPM through *Plataforma Brasil* – Certificate of Presentation for Ethical Consideration (CAAE) No. 24351414.4.0000.5505 – and approved by Report No. 622986. The adolescents and their guardians signed a written informed consent form, authorizing the use of the information for research purposes.

Results

According to 282 medical records analyzed, 82 adolescents were referred to PAS, but did not start the program. The adherence group was composed of 116 teenagers, who attended PAS program for at least six months; 84 teenagers left the program in the first half, and they were included in the dropout group (Figure 1).

The adherence group participated in PAS for 12.1 ± 5.25 months, on average, and the dropout group, for 2.9 ± 1.35 months, a difference that was statistically significant ($p < 0.001$).

The sample was composed by 55% of boys, average age of 14 years old (range 11-18), 60% living in urban areas and 40% in rural areas (Table 1). Low levels of school performance were observed among the adolescents: 23% of school dropout, 59% of gap in school-grade age, and 69% of school failure. From the adolescents that dropped out of school, approximately 73.3% stopped studying because they disliked school and 18%, due to health or emotional problems. Among adolescents who had school failures, 47% had failed more than once.

Most adolescents (46%) lived with their mothers, 30% with both parents, 10% only with the father, 6% with other relatives and 8% in shelters. Households had, on average, three rooms and four people. The mothers' average age was 38 years old, 66% of them had not completed elementary school and 20% had completed high school, 35% were stay-at-home mothers and 45% were self-employed professionals. Most households (41%) lived with one to two minimum wages, of which 24% had household incomes below the poverty line. Mothers were the main responsible for adolescents (70%) and 48% of the families attended PAS with their children.

The Child Protection Council conducted most referrals to PAS (70%). The most frequent initial complaint was school problems (50%), followed by disruptive behavior

(26%) and, lastly, family/social vulnerability (24%) (Table 1). In addition to the complaint, 10% of the adolescents had a history of physical or sexual abuse, 14% had a psychiatric diagnosis, 13% were in medical care and 11% were using some medication at the beginning of the intervention. Moreover, 35% of the adolescents and 52% of families used some licit or illicit substance, and 27.5% of the adolescents had ill family members at home who suffered from chronic diseases and mental disorders.

The groups of teenagers who joined the program and those who left were different. Adherence to PAS was associated with being studying when joining the program, having household income above the poverty line, counting with the participation of the family and living in urban areas (Table 1).

Among the participant adolescents, 74.5% were attending school after 6 months. The analysis of the effectiveness of intervention showed that adherence to PAS was associated with the condition of attending school after six months of follow-up (RR=1.12. 95%CI: 1.01;1.27) and after adjustment for the effects of other variables associated with the outcome. Other conditions that showed significant association with being studying after six months were attending school when joining the program (RR=8.52; 95%CI: 3.71-19.57) and absence

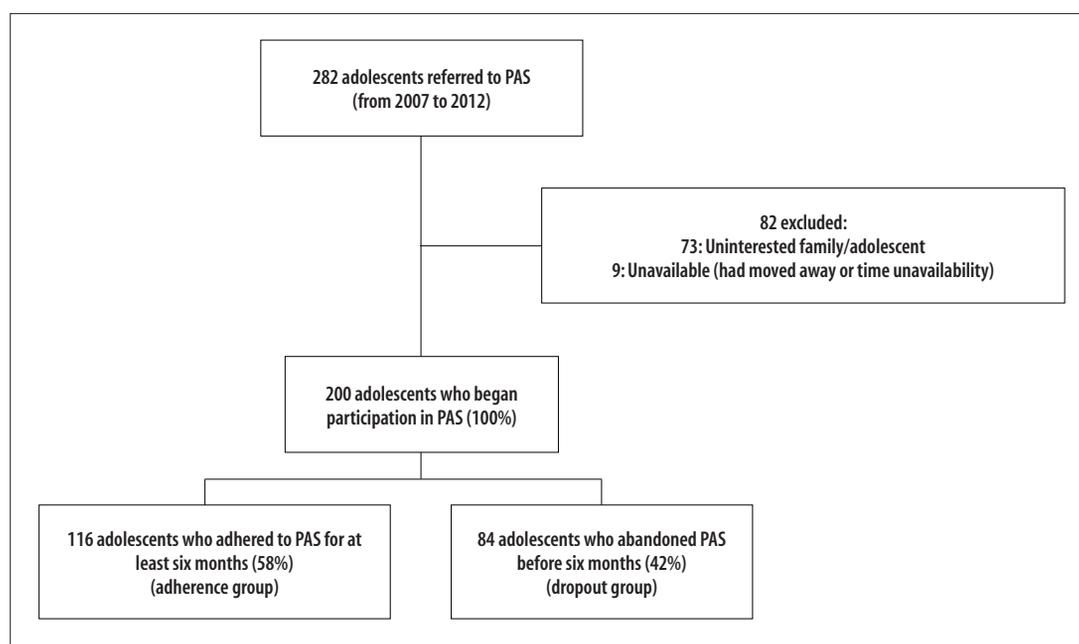


Figure 1 – Distribution of adolescents referred to the Psychosocial Care Program (PAS) in the municipality of Caçapava, São Paulo, 2007-2012

Table 1 – Factors associated with adherence to the intervention in 200 adolescents assisted by the Psychosocial Care Program (PAS), in the municipality of Caçapava, São Paulo, 2007-2012

Variables	Adherence to intervention		Sample Total n(%)	Unadjusted analysis		Adjusted analysis ^c	
	Yes n (%)	No n (%)		RR ^a	95%CI ^b	RR ^a	95%CI ^b
Sex							
Female	58 (50.0)	32 (38.1)	90 (45.0)	1.22	0.96;1.54	1.16	0.92;1.45
Male	58 (50.0)	52 (61.9)	110 (55.0)	1.00		1.00	
Age group (in years)							
15-18	36 (31.0)	34 (40.5)	70 (35.0)	0.81	0.58;1.13	0.91	0.65;1.26
13-14	56 (48.3)	36 (42.9)	92 (46.0)	0.96	0.71;1.29	1.00	0.75;1.32
11-12	24 (20.7)	14 (16.7)	38 (19.0)	1.00		1.00	
Area of residence							
Rural	52 (44.8)	29 (34.5)	81 (40.5)	0.83	0.66;1.05	0.77	0.61;0.97
Urban	64 (55.2)	55 (65.5)	119 (59.5)	1.00		1.00	
Household income							
Above the poverty line	100 (86.2)	52 (61.9)	152 (76.0)	1.97	0.96;1.54	1.78	1.24;2.56
Below the poverty line	16 (13.8)	32 (38.1)	48 (24.0)	1.00		1.00	
Attending school^d							
Yes	98 (84.5)	56 (66.7)	154 (77.0)	1.62	1.11;2.37	1.83	1.29;2.59
No	18 (15.5)	28 (33.3)	46 (23.0)	1.00		1.00	
Gap in school-grade age							
Yes	58 (50%)	60 (71.4)	118 (59.0)	1.00		1.00	
No	58 (50%)	24 (28.6)	82 (41.0)	1.43	1.14;1.81	1.14	0.90;1.44
Mental disorder							
Yes	18 (15.5)	10 (11.9)	28 (14.0)	1.12	0.83;1.53	1.13	0.88;1.47
No	98 (84.5)	74 (88.1)	172 (86.0)	1.00		1.00	
Initial complaint							
Disruptive behavior	23 (19.8)	28 (33.3)	51 (25.5)	0,73	0.50;1.07	0.88	0.61;1.27
Problems at school	63 (54.3)	37 (44.0)	100 (50.0)	1,02	0.78;1.34	1.20	0.93;1.54
Family/social vulnerability	30 (2.59)	19 (22.6)	49 (24.5)	1,00		1.00	
Family participation							
Yes	74 (63.8)	22 (26.2)	96 (48.0)	1.90	1.47;2.47	1.73	1.36;2.21
No	42 (36.2)	62 (73.8)	104 (52.0)	1.00		1.00	

a) RR: relative risk

b) 95%CI: confidence interval of 95%

c) Adjusted Poisson regression

d) Beginning of intervention in the Psychosocial Care Program (PAS)

of complaint of disruptive behavior (RR=0.92; 95%CI: 0.84-0.99) (Table 2).

Discussion

The results of this study show a high proportion of adolescents in social vulnerability that joined the psychosocial intervention program. This adherence contributed so that the adolescent would be studying after six months, which was the effectiveness parameter used in this study. However, individual characteristics,

such as being already studying when joining the program, played a predominant role in this outcome.

The intervention adherence rates were 58%, within the range presented in international studies, which varies from 30% (substance use disorders) to 80% (other mental disorders).¹⁶⁻¹⁸ Treatment compliance is considered a challenge, especially when dealing with adolescents: the stigma of psychosocial intervention adversely affects their self-esteem, to the point of reducing the possibilities of integration and search for treatment,^{19,20} either by concern that the professional

Table 2 – Effects of the Psychosocial Care Program in the school continuity after six months in the municipality of Caçapava, São Paulo, 2007-2012

Variables	Be studying after six months		Sample Total n (%)	Unadjusted analysis		Adjusted analysis ^c	
	Yes n (%)	No n (%)		RR ^a	95%CI ^b	RR ^a	95%CI ^b
Sex							
Female	70 (47.0)	19 (40.4)	89 (45.4)	1.06	0.91;1.24		
Male	79 (53.0)	28 (59.6)	107 (54.6)	1.00			
Age group (in years)							
15-18	49 (32.9)	20 (42.6)	69 (35.2)	0.82	0.67;1.00		
13-14	68 (45.6)	22 (46.8)	90 (45.9)	0.87	0.73;1.03		
11-12	32 (21.5)	5 (10.6)	37 (18.9)	1.00			
Area of residence							
Rural	52 (34.9)	28 (59.6)	80 (40.9)	1.28	1.07;1.54		
Urbana	97 (65.1)	19 (40.4)	116 (59.2)	1.00			
Household income							
Above the poverty line	115 (77.2)	33 (70.2)	148 (75.5)	1.09	0.89;1.34		
Below the poverty line	34 (22.8)	14 (29.8)	48 (24.5)	1.00			
Adherence to the intervention							
Yes	100 (67.1)	16 (34.0)	116 (59.2)	1.40	1.16;1.70	1.12	1.01;1.27
No	49 (32.9)	31 (66.0)	80 (40.8)	1.00		1.00	
Attending school^d							
Yes	144 (96.6)	6 (12.8)	150 (76.5)	8.83	3.85;20.26	8.52	3.71;19.57
No	5 (3.4)	41 (87.2)	46 (23.5)	1.00		1.00	
Gap in school-grade age							
Yes	75 (50.3)	40 (85.1)	115 (58.7)	1.00			
No	74 (49.7)	7 (14.9)	81 (41.3)	1.04	1.20;1.62		
Mental disorder							
Yes	16 (10.7)	11 (23.4)	27 (13.8)	0.75	0.54;1.04		
No	133 (89.3)	36 (76.6)	169 (86.2)	1.00			
Initial complaint							
Disruptive behavior	37 (24.8)	11 (23.4)	48 (24.5)	0.80	0.68;0.94	0.92	0.84;0.99
Problems at school	65 (43.6)	34 (72.3)	99 (50.5)	0.68	0.58;0.79	0.96	0.91;1.02
Family/social vulnerability	47 (31.5)	2 (4.3)	49 (25.0)	1.00		1.00	
Family participation							
Yes	75 (50.3)	21 (44.7)	96 (49)	1.05	0.90;1.23		
No	74 (49.7)	26 (55.3)	100 (51.0)	1.00			

a) RR: relative risk

b) 95%CI: confidence interval of 95%

c) Adjustes Poisson Regression

d) Beginning of intervention in the Psychosocial Care Program (PAS)

will not maintain confidentiality,¹⁹ or due to the difficulty of self-perception of the severity of the problem.^{20,21}

In this study, most of the adolescents who joined PAS were attending school at the beginning of the intervention, had household income above the poverty line and counted with their families' participation in psychosocial care. These results are similar to those found in literature, meaning that education provides better

access to information, knowledge, health care and also the chance of seeking support and resources;^{8,9} besides that, families with better income have all the benefits provided by education, plus better transport conditions for themselves and their children under treatment.²⁰ Several studies show that family participation is associated with adherence to the intervention.^{18,20-22} Family support during treatment improves communication between

parents and children and assists in the management of conflicts, maintenance of the teenager involved and motivated with the treatment, even in programs in which the participation is voluntary.¹⁸ Even with the high importance of family participation, some authors point to the difficulties of this participation, especially among those families at high social risk, facing precarious living and housing conditions, and who are under violence situations. Those difficulties may prevent family participation in the child's treatment, even when the family receives financial support and transport assistance.¹⁷

Psychosocial intervention contributed to adolescents' school continuity after six months of follow-up. The condition of being studying when joining the program, proved to be essential for this success. The impact of adolescents' school performance and health are highlighted in another study whose aim was beyond the reach of psychosocial interventions.¹⁰ However, interventions in health care can be an opportunity to address the risk of school dropout influenced by the adolescent health.¹⁰

Behavior problems, like substance abuse, aggressiveness, teenage pregnancy, among other behaviors considered disruptive, have been pointed as strong predictors of school dropout.²³⁻²⁵ However, these problems faced during adolescence can be minimized with the implementation of health programs focused on changing risk behaviors, which invest in positive interpersonal relationships.²⁴

The reasons why the intervention actions were successful were the strategies that emphasized adolescent embracement, offering social and emotional support, mediated by mutual agreement of trust and free of moral judgment, which acknowledges and values adolescents as citizens, who have the right to receive information and to exercise their autonomy in decision-making.^{13,26,27} The lack of references and social support for these adolescents justifies this work that aims at promoting their independence and development of critical views, providing tools for them to cope with society's reality. Encouraging adolescents to play an active role in the process, as voluntary participants in PAS, allows them to engage in taking responsibility for the therapeutic process to the extent of awareness of their own needs and initiative. Importantly, the construction of this positive bond depends on the stability of the

professional staff^{18,22} and the quality of interaction between them and the teenagers.^{20,28}

Once established this bond, the therapeutic approach seeks to minimize individual and social losses associated with risk behaviors in adolescence,²⁶ by offering alternatives to develop their full potential.²⁷ The assumption that teaching adolescents to reduce and protect themselves from major damage to their health is the best option for this stage of life, through continuous education actions directed to the development of safer habits. The strategies that enable more opportunities, skills and recognition of adolescents make social, community and family bonds more consistent, and, thus, open up possibilities for a path change throughout adolescence, favoring the development of protective factors.²⁹ The success of health promotion interventions among low-income adolescents has been attributed especially to interventions involving the family and community.³⁰ Such approaches are based on those advocated by harm reduction and health promotion studies.^{13, 26,27}

This study, however, has some limitations. In this sense, the possibility of biases influencing the results presented cannot be disregarded. First, the study included only adolescents referred to PAS: the sample is not representative of the population of adolescents at risk, because it is composed of referrals to a specific service. Participation or not in PAS was not randomized, because the adolescents who did not undergo intervention were precisely those who had dropped it out, that is, the control-group formed by the intervention dropout adolescents after receiving treatment (for less time), suggesting selection and measurement bias.

Second, the proportion of adolescents studying when joining the program was higher in the adherence group, and may have generated confounding bias, as this variable was unequally distributed between the groups and may have influenced the success of the intervention. After statistical control to reduce the confounding effect, we found that, regardless of whether adolescents were studying or not when joining the program, there were more adolescents attending school among those who joined the intervention compared to the dropout group (control). Nevertheless, the magnitude of association regarding the variable 'to attending school when joining the program' is greater than the effectiveness of the intervention.

Another limitation concerns the information obtained from the medical records of the institution and self-reports. Although they have been supplemented with data from other sources, a lot of information among those in the group who abandoned the service was lost.

Furthermore, the limit of six months set as outcome variable may have been short: depending on the period when adolescents joined the study, there was no time to initiate another school year.

Despite these limitations, it is important to consider that in the Brazilian context, this study may show a positive result for a psychosocial intervention in this population.

Adherence to a psychosocial care program with the characteristics of PAS was effective to continuity or return of adolescents to school after six months of program, although the adolescents' characteristics have also played an important role in this result. The characteristics of service – reception mediated by confidence and free of moral judgment, team stability and therapeutic strategies based on assumptions of the theoretical and conceptual framework of harm reduction and health promotion – were responsible for the success of the

program. A service with these characteristics can be an alternative to face school dropouts, common in this population group, and achieve benefits to adolescents' health. Future studies should be conducted in order to evaluate the effectiveness of this type of intervention in the long term, with a control group not exposed to the intervention, to ensure and control the distribution of the important variables in both groups, ensuring that the intervention is solely responsible for the result.

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Authors' Contributions

De Paula TCS, Moreira FG e Andreoli SB contributed to the conception of the study, analysis of data and review of the manuscript's content.

All authors approved the manuscript's final version and declared to be responsible for all aspects of the work, ensuring its accuracy and integrity.

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