

Learning by Doing: 'Initiated Abstinence', a School-Based Programme for the Prevention of Addiction

Results of an Evaluation Study

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Key Words

School-based prevention · Renunciation agreement ·
Addiction

Abstract

The objective of the study was to find out whether the school-based prevention programme 'Initiated abstinence' is suitable to induce pupils to change their consumer behavior and attitudes. The participants of the prevention programme commit themselves 'per contract' to abstain from or considerably reduce their consumption of at least one of their currently used substances (e.g. sweets, cigarettes) or media (TV, computer games) for a period of 2 weeks. The main goal of the programme is to sharpen their problem and health consciousness concerning addiction and pleasure seeking. The programme was evaluated by a longitudinal study. At three given times, the 12- to 15-year-old pupils of the experimental classes were interviewed by standardized self-completion questionnaires ($n = 2,267$). The control classes were submitted to two surveys ($n = 586$). The study was carried out in the areas of Innsbruck (Austria), Schleswig-Holstein (Germany) and South Tyrol (Italy). Not all pupils were able to keep their intentions submitted in their contract, but 4 of 5 pupils had at least one positive experience with the renunciation (82%). There were 'overall effects': The actual renunciation of the

pupils was much higher than stated in their agreement. The experimental group showed significant reduction effects for pupils, who had successfully reduced or stopped use of a substance or medium. In a further step, it should be explored whether the programme is suitable also for older groups, i.e. for pupils older than 15 years. Moreover, the long-term effects of the programmes should be tested.

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Introduction

Drug and addiction policies of the European Union member states are increasingly interested in addiction prevention programmes [1, 2]. School-based prevention programmes play a particularly important role [3–5]. Their goals and methods are not fundamentally different from those of other primary prevention measures: In the school context the focus was initially solely on deterrence and the imparting of knowledge concerning addiction and drugs [6, 7]. However, evaluation studies showed that the results were not satisfactory. Therefore, multidimensional strategies are now applied. These strategies still include the imparting of substance related knowledge, but they focus mainly on the strengthening of personality characteristics and include environmental factors to a greater extent [8, 9].

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A literature analysis shows that numerous school-based prevention programmes were evaluated in the EU in the nineties [2, 4, 10]. However, according to most of these evaluations, a programme is already 'successful' if it is well accepted or if the knowledge on drugs increased. Therefore, most of these evaluations report positive results. However, in most cases it is not possible to determine which of the diverse programme elements were mainly responsible for the positive results. Moreover, the evaluations focus on acceptance and cognition, and the level of action is left out; therefore, statements on changes of consumer behavior are not possible. A few evaluation studies try to show this dimension of effectiveness by comparing prevalence rates before and after the prevention programme [1, 2]. However, few studies of that type exist for the age group 12–15 years [10–12]. Only few study designs allow conclusions on mid- and long-term consumption changes that can be attributed to prevention measures [10, 13].

An evaluation of the EDDRA database ('Exchange on Drug Demand Reduction Action') of the European Monitoring Centre for Drugs and Drug Addiction shows that a great number of school-based projects have been carried out and that they cover a broad range of target groups, aims and methods. However, there are still gaps. On the one hand, only few programmes address the subject of non-substance consumption – such as TV and computer games. On the other hand, active participation and self-experience of consumption and renunciation were not an integrative part of these projects. The only exception is the school based non-smoker competition 'Be smart, don't start', which is being implemented in some EU countries [14].

Though, compared to the EU, the evaluation quality of school-based programmes for addiction prevention is higher in the USA and a greater number of systematic evaluation studies (among them many randomized follow-up studies) have been carried out in the area of drug prevention at schools [13, 15–18], only very few of them include non-substance consumption (e.g. TV, computer games, gambling) or exercises, which train renunciation and consumer behavior.

The addiction prevention programme 'Initiated abstinence' trains the ability of renunciation; it has been carried out since 1995 with the cooperation of 10,000 pupils. Its main goal is not to induce pupils to a basically abstinent behavior but to sharpen their problem and health consciousness in terms of addiction and pleasure seeking. In this context, it seems useful to include substances of daily life such as sweets or highly habit-forming activities

like TV and computer games in the range of renunciation targets, as young pupils do not yet consume alcohol or cigarettes and have no experience of illicit drugs.

The object of the study was to find out whether the educational programme is really suitable – at short and mid-term – to induce pupils to change their consumer behavior in the described way. The study was carried out within the framework of an action programme of the European Community whose main goal is an increase of knowledge concerning means and methods of addiction prevention.

Method

Intervention

The didactic aim of the school-based prevention programme 'Initiated abstinence' was the development of pupils' autonomy and health consciousness with regard to consumer behaviour¹. They were encouraged to achieve competence and control concerning their personal consumer behavior. This can lead to abstinent behavior, but trying out, experimenting or moderate consumption are not excluded. The initiated self-experience of temporary renunciation is meant to convey new insights to pupils in a situation where they abstain from the usual, beloved or forbidden substances or media. From the educational point of view, the desired result is that pupils develop greater abilities to control and understand and that this will lead to less excessive consumption or to the avoidance of certain substances. Considering the pupils' age, consumption – in this programme – relates to legal substances such as sweets, cigarettes and alcohol, to illicit drugs such as cannabis and ecstasy, but also to TV and computer games. This programme is based on learning-theory assumption, namely that experiencing conscious renunciation at an early age furthers self-responsible and problem-conscious handling of addiction and pleasure substances (alcohol, cigarettes, cannabis, sweets, etc.) and accordingly results in health-orientated attitudes towards consumption (also in terms of television and computer games).

The participants of this addiction prevention programme commit themselves 'per contract' to a schoolmate – not a teacher – to abstain from or considerably reduce consumption of at least one of their currently used substances or media for a period of 2 weeks. The entire module consists of eight different elements, which are carried out in the following sequence: (1) presentation and discussion of the results of the class investigation ('consumption profile of the class'); (2–4) three exercises on addiction aimed at achieving a sensitisation for one's personal consumer behaviour; (5) the renunciation agreement for two weeks; (6/7) sheet and wall map to register the personal physical and mental condition in the course of the renunciation exercise; (8) document in appreciation of a successfully kept renunciation

¹ The programme was developed and is disseminated by the Landesstelle gegen die Suchtgefahren Schleswig-Holstein (provincial addiction office) (LSSH, Kiel, Germany) and the Koordinationsstelle Schulische Suchtvorbeugung (coordination of school-based addiction prevention) (KOSS, Kiel, Germany) [19].

agreement. The renunciation agreement is the main part of the entire programme.

This sequence has an inner consistency: The representation of the consumption situation within the class and the emphasizing exercises direct the pupils to those subjects of renunciation that are relevant and possibly a problem for them.

The teachers applied the programme independently after they had been trained accordingly. This training combined with a manual ensured that the teaching programme was applied in a standardized way at all study locations.

Setting

The study was carried out in the areas of Innsbruck (Austria), Schleswig-Holstein (Germany) and South Tyrol (Italy) in 2000 and 2001. The evaluation of the prevention programme was carried out in the forms 6 to 8, i.e. with 12- to 15-year-old pupils. This is a particularly important age group for prevention programmes, because at this age the range of addictive means increases and consumer behavior is adjusted to adult behavior.

In Germany and Austria, classes of all school types ('Hauptschule', 'Realschule' and 'Gymnasium') were involved; in Italy all classes belonged to the same school type, which is standard up to the 8th class.

Design, Participants

The school-based prevention programme 'Initiated abstinence' was evaluated by a longitudinal study, which allowed to record short- and mid-term effects. At three given times, the pupils of the experimental classes – i.e. those classes where the educational programme was carried out – were interviewed by standardized self-completion questionnaires:

- 1 Initial survey 4 weeks prior to the start of the prevention programme.
- 2 First follow-up immediately after the conclusion of the programme.
- 3 Second follow-up 12 weeks after the conclusion of the programme.

The first survey reached 2,267 pupils, the second 2,223 and the third 2,207. The surveys were anonymous and the questionnaires were sent to the evaluating research institute in a sealed envelope. The teachers had no access to the individual questionnaires. Social structural and individual characteristics that were part of the questionnaires allowed the individual matching of almost all questionnaires of the three surveys. It was possible that way to assign a total of 1,929 pupils to all three parts of the survey (85%).

A major requirement of an evaluation study involving complex influences is a research design with an experimental and a comparison group. Therefore, control classes were set up at the same schools parallel to the experimental classes². The gender rates were similar

² Experimental and control classes were selected according to local conditions prevailing at the schools – teachers' willingness to participate, consideration of the school's organization plan, adaptation of the programme's sequence to the teaching schedule. Therefore, a randomization was not possible for organizational reasons, but specific selection was not intended. Selection was based solely on the currently prevailing possibilities and conditions at the schools concerned. There were no coordinating agreements between schools, neither within a country nor between the different countries. But nevertheless, the detected effects were found similarly in all three countries. This indicates that no bias occurred.

both in the experimental and the control classes. The age in control classes was 3 months lower than the mean age of experimental classes. As this age difference was significant, all statistical analyses were corrected accordingly.

In the control classes, the educational programme for addiction prevention was not carried out, but two surveys were completed:

- 1 Initial survey, parallel to the experimental classes.
- 2 Final survey, parallel to the second follow-up of the experimental classes.

The first survey reached 586 pupils, the second 534. It was possible to assign 490 pupils of the control group to both surveys (84%).

The questionnaires used for the surveys of the experimental and control classes collected data on the pupils' use of substances/media (amount, frequency/pattern, motives), on their estimation of the danger potentials of substances/media, their communicative behavior and their recreational behavior.

In addition, the participating teachers of the experimental classes were interviewed on their experiences with the school-based prevention programme. 95 of 103 teachers responded.

Results

Participation and Acceptance

Most pupils were latently willing to participate in the renunciation exercise. In their answers to the corresponding question, almost 70% of the pupils stated that they had always meant to do 'something like that' or had wanted to prove to themselves that they could stop. Therefore, it is not surprising that almost all pupils participated in the renunciation exercise (97%).

70% of the participating pupils decided that, during the 2 weeks of renunciation, they would abstain from *one single* substance (or medium) or reduce its consumption considerably. The others chose two or more objects of renunciation. Most pupils chose to abstain from sweets (62%). TV and computer games were also chosen comparatively often as objects of renunciation (40%). However, only 1 of 5 current consumers of alcohol, solvents ('sniffing') or cannabis decided to abstain from the respective substance (20%).

The renunciation modalities – either 2 weeks without any consumption or with considerably reduced consumption – chosen by the pupils differed with respect to the individual substances (media). Where TV was concerned, the reduced consumption modality was chosen most often (80%). In the case of medicinal drugs and illicit drugs, the aim was most often complete abstinence (75–87%).

Not all pupils were able to keep their intentions of the renunciation, but 4 of 5 pupils had at least one positive experience with renunciation (82%). Most pupils felt good at the end of the 2 weeks of renunciation (68%). Many of them felt that renunciation became increasingly easy dur-

Table 1. Current consumption of pupils with respect to age¹

	Age				Total
	12 years	13 years	14 years	15 years	
Sweets	99.0%	99.7%	99.5%	99.7%	99.5%
Cigarettes	4%	11%	23%	34%	20%
Alcohol	12%	17%	36%	52%	31%
Cannabis	1%	2%	4%	6%	4%
Solvents ('sniffing')	5%	5%	5%	7%	5%
Ecstasy	1%	1%	1%	3%	2%
Medicinal drugs	4%	5%	7%	9%	6%
Television	95%	95%	96%	95%	95%
PC games	75%	77%	75%	72%	75%
Total pupils	314	596	834	399	2,143

¹ Current consumption refers to pupils who state that they consumed the specific substance/medium at least occasionally, i.e. several times a month, during the last 3 months. Pupils who had only tried the substance during that period are not included.

ing the 2 weeks (45%), but for some of them it became more difficult (14%).

The educational programme 'Initiated abstinence' was well accepted by teachers, both for concept and content and for structure and implementation, with 'very good' or 'good' marks by all teachers. The 8 different elements of the programme were also marked 'good' by the teachers (average mark 1.6–2.3). Moreover, teachers felt that the prevention programme is well suited to the age group. The majority of teachers favored a repetition of the programme in their classes (57%).

Pupils also assessed the 'Initiated abstinence' as positive. This was true not only immediately after a teaching unit that they considered to be varied and informative (57%), but also retrospectively after 3 months (70%). Moreover, the educational programme promoted thoughtfulness and changed behaviors (63%; after 3 months: 65%).

Most pupils also welcomed a repetition of the prevention programme. This positive assessment was not only stated immediately following the educational programme, but also 3 months later (63 and 64%, respectively). Moreover, many pupils could even imagine trying the renunciation exercise again on their own, i.e. together with friends (59%) or in the family context (47%).

Pupils' Consumer Behavior Prior to the Programme

Substance use of pupils prior to the intervention was, on the whole, similar to the prevalence found in other epidemiological surveys [20, 21]. This was true also for the well-known gender-specific differences. Therefore, it can

be assumed that the prevention programme 'Initiated abstinence' was applied to a representative group of pupils³. One of 5 pupils between 12 and 15 years of age was a current smoker, i.e. he smoked at least several times a month; about 30% of the pupils drank alcoholic beverages (table 1). Only a very small number used illicit drugs (cannabis 4%, ecstasy 2%). Almost all pupils ate sweets and watched television, and for 3 of 4 pupils computer games were part of daily life. There were no relevant differences between the three regions (Germany, Austria, Italy). The fact that they are growing is the decisive influence on pupils' consumer behavior (table 1). Use of cigarettes, alcohol and also illicit drugs increased considerably with increased age. However, TV, computer games and sweets were not related to age. Habit acquiring and formation started earlier in these cases.

Effects on Consumption Behavior

In the Course of the Intervention

Most pupils succeeded in fulfilling at least one of their renunciation agreements (82%, see above). Beyond keeping the 'official' obligations, there were also 'overall effects': Due to the concomitant phenomenon of an unofficial renunciation (one that was not contained in the contract) the actual renunciation of the pupils was much higher than stated in their agreement with third persons. This refers mainly to substances prohibited for that age group

³ Baseline prevalences of pupils in experimental and control classes are similar. The presented data concern the prevalences of experimental classes.

Table 2. Consumption situation of pupils immediately after the renunciation exercise (1st follow-up)

Objects of renunciation	Current consumers	No consumption	Reduced consumption	Unchanged consumption	Increased consumption
Sweets	1,890	12%	50%	35%	3%
Television	1,822	4%	42%	51%	2%
PC games	1,434	14%	40%	38%	8%
Alcohol	558	53%	18%	23%	6%
Cigarettes	350	30%	27%	31%	12%
Medicinal drugs	109	86%	6%	6%	2%
Solvents	97	82%	6%	7%	4%
Cannabis	58	83%	10%	5%	2%
Ecstasy	25	76%	16%	4%	4%

or for illicit substances. The renunciation exercise thus extended beyond the chosen renunciation objects – as a rule, sweets and electronic media as natural elements of daily life – and changed the overall consumer behavior of pupils. During the renunciation exercise, a particularly great number of current consumers of cannabis, ecstasy and solvents stopped their use entirely (76–83%) (table 2). The abstinence rates of electronic media and sweets, and also of smoking are lower (30%), although many pupils also reduced this type of consumption, e.g. sweets (50%) or TV (42%).

Three Months after the Intervention

Pupils of the experimental and the control group were investigated prior to the start of the programme and 3 months after its conclusion using the same questionnaire. The change of consumer behavior during those 4 months was different in each of the 2 groups. The experimental group showed significant reduction effects for pupils, who had successfully reduced or stopped consumption of a substance or medium – with or without agreement. The control group increased or extended their consumption. In this group, the average consumption increase was even higher – with the exception of sweets – than for those pupils of the experimental group, who could or would not reduce their consumption or who did not currently consume. These effects have been compiled in table 3 (positive signs mark an increase, negative signs a decrease of consumption).

A detailed examination shows that the greatest effects were realised with regard to medicinal substances (tranquillizers/stimulants), sniffing substances and illicit drugs (cannabis, ecstasy). The degree of effectiveness – it describes the change of the (average) consumption between

the initial investigation and the second follow-up – for these substances was between –4.28 and –19.06 (table 3). The control classes, however, recorded increased use of these substances (+0.75 to +1.33). The lowest reduction is recorded for watching TV (–0.20), and cigarette smoking (–0.23). However, though reduction rates of TV and smoking in the experimental classes were low, the control classes recorded a considerable increase (+1.14 and +2.07, respectively).

The described effects are also reflected by the prevalence rates. They show that current consumers, who had participated in this type of programme, more readily abstain from consumption than those of the control group; moreover, former consumers or abstinent pupils are more effectively prevented from taking up consumption (again). Cigarette smoking will serve as an example; the results are similar for other substances:

Of those pupils in the experimental class, who had currently smoked prior to the programme, 26% had stopped 3 months later. In the control classes, the percentage is ‘only’ 18%. Of those pupils in the experimental class, who had smoked at some point but had stopped smoking prior to the programme, 14% smoked again three months after the intervention. The corresponding score in the control class was 20%. Of those who had never smoked before, 3% began to smoke in the experimental class and 6% in the control class 3 months after the intervention.

Though the prevalence rates in the experimental classes also increased from 18 to 19%, the increase is considerably higher in the control classes, from 17 to 23%. This effect of slower increase of cigarette smoking is particularly obvious for children (under 14 years of age): The control classes recorded an increase from 9 to 16%, the experimental classes a decrease from 8 to 7%.

Table 3. Changes of consumption in the experimental and control classes prior to the programme and three months after the programme

	Experimental classes				Control classes		Significance ⁴
	successful renunciation ¹		no consumption/no renunciation ²		effective value	n	
	effective value ³	n	effective value	n			
Television	-0.20	834	+0.73	1,060	+1.14	475	***
PC games	-1.38	763	+0.24	1,122	+0.49	463	***
Sweets	-2.20	1169	+0.50	727	+0.15	482	**
Cigarettes	-0.23	181	+0.85	1,660	+2.07	460	***
Alcohol	-1.69	292	+0.56	1,437	+1.23	435	***
Medicinal drugs	-4.28	199	+0.10	1,707	+0.92	484	***
Solvents	-6.20	58	+0.04	1,800	+0.75	473	***
Cannabis	-6.04	45	+0.02	1,850	+1.33	479	***
Ecstasy	-19.06	17	+0.02	1,885	+0.80	484	***
Number of cigarettes	-1.38		+1.28		+3.18		**

+ = Increase of consumption; - = decrease of consumption.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

¹ Successful renunciation/reduction during the programme.

² No current consumption prior to the programme or no renunciation during the programme reported.

³ The effective value describes the change of (average) consumption between the initial investigation and the second follow-up. The basis of calculation is, for TV and PC games, the reported hours per week (5 scale: from 1 'not at all' to 5 'more than 20 h'); for substances, the frequency during the last 3 months (5 scale: from 1 'not at all' to 5 'daily'). The latter scale was converted into consumption days, so that the table values indicate the decrease or increase of consumption days during the last three months; e.g. cannabis users consumed less cannabis on 6.04 days.

⁴ All tests of significance were carried out by MANOVA (SPSS) on the scale level of the respective questions. The significance refers to the comparison of the 3 groups.

Discussion

School-based prevention programmes concerning addiction prevention not only expect pupils' acceptance and interest. They hope that the measures will be 'effective', i.e. that behaviors and attitudes change in the desired direction, both short and mid-term. Only few evaluations of prevention programmes at European schools – unlike in the USA – included these effects.

The results of this study are encouraging for addiction preventive work at schools. The educational programme 'Initiated abstinence' is not only well accepted and positively appraised by pupils and teachers, but a considerable number of pupils reduce their consumption. The programme evidently addresses the pupils' motivation in a manner well suited to the problem. This is confirmed by their willingness to repeat the programme.

The represented results show the *specific effectiveness* of 'Initiated abstinence': No other influencing factor is evident that induces the participating pupils to reduce their consumption irrelevant of the substance or medium. It is only the positive experience of conscious renunciation of a specific substance (medium) that leads to a

change of their consumer behavior compared to the initial situation, at least in the three-month period of observation. This supports the behavioral theoretical assumption that by consciously experienced renunciation, the factor of self-experience enables pupils to handle their consumption autonomously. In a developmental phase where an increase is usual, a limitation of use occurs, without command and without coercion. It is true that the effects are not very great, but they are contrary to the general developmental trend of this age group.

This is supported by the fact that consumption increases in the control classes during the period of investigation. Even if the control classes could not be randomized, they correspond to the experimental classes prior to the programme with respect to gender distribution and consumer behavior, so that other influence factors can be excluded.

Moreover, the high degree of acceptance of the school-based programme tends to become permanent. 'Initiated abstinence' is an addiction prevention programme not easily forgotten; the reverberations are positive at least at medium range.

When investigating pupils concerning their consumption of pleasure and addictive substances, a recurring issue is the reliability of their answers, especially where illicit drugs are concerned. In this survey, the pupils' statements concerning their consumption can be rated as valid and reliable, because, on the one hand, they correspond to the statements of other epidemiological surveys, and, on the other hand, the sociostructural self-reports of most pupils agree ad persona in all three investigations.

The results of this study refer to the school classes 6–8, that is 12- to 15-year-old pupils on average. These are precisely the age groups in which consumption of addictive substances starts and increases: the adolescent developmental phase. Therefore, the conclusions are at present only valid for this age group. In a further step it should be explored whether the programme is suitable also for higher classes, i.e. for pupils older than 16 years. It should be tested whether the educational programme 'Initiated ab-

stinence' has positive effects also for this age group with their specific consumer behavior: heavy increase of prevalence rates and experimental behavior and a larger number starting to use illicit drugs.

Moreover, these results refer only to a 4-month period of observation; therefore, the long-term effects of the programmes should be assessed to find out whether the observed consumption reduction lasts over a longer period of time (longer than one year). The renunciation exercise possibly needs to be repeated at certain intervals in order to stabilize the effects. Unless these questions are answered scientifically, it is not possible to make a comprehensive statement concerning the range and degree of effectiveness of 'Initiated abstinence'. However, the results are encouraging so far. They give reason to believe that this educational programme for addiction prevention has positive effects both on behavior and attitude.

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