Evaluation of a Swedish version of the Strengthening Families Programme

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Background: Adolescents’ alcohol consumption is a public health concern in Sweden as well as in many other countries. Underage drinking is associated with increased risks of alcohol-related injuries, risky sexual behaviours and dependence later in life. Different strategies have been used in the effort to prevent this behaviour, and to postpone the onset of alcohol. The Strengthening Families Programme 10–14 (SFP 10–14) from the USA has been highlighted as one of the more effective prevention programmes. The aim of the present article was to evaluate the effectiveness of a culturally adapted Swedish version of the SFP 10–14. Methods: This was a cluster randomized controlled trial including 587 sixth-grade students (age 12) and their parents in 19 elementary schools in Stockholm. Schools were randomly assigned to either control (9 schools, 216 students) or to the family skills training intervention (10 schools, 371 students). The SFP Swedish version consisted of two parts with seven and five sessions, respectively, held separately for youths and parents except two joint family sessions. Measures of students’ self-reported episodes of drunkenness, smoking, illicit drug use and other norm-breaking behaviours were collected at baseline (March 2003) and at three subsequent yearly surveys. Data were analysed using multilevel models with an intention-to-treat approach. Results: No preventive effects were found for smoking, alcohol and illicit drug use and other norm-breaking behaviours, nor did moderators affect the outcome. Conclusion: The Swedish version of the SFP 10–14 was not effective in preventing youths’ substance use in a Swedish context.

Introduction

Alcohol consumption among young people is a public health concern in many countries. In Sweden, 71% of 15–16-year-old youths reported having consumed alcohol during the past 12 months and 37% reported being drunk in the past 12 months. The prevalence of binge drinking, i.e. having five or more drinks in a row, during the past 30 days was 37%. Underage drinking is associated with an increased risk of alcohol-related injuries,4–6 risky sexual behaviour5 and dependence later in life5,7. Furthermore, alcohol use may contribute to adverse effects on the developing adolescent brain.8

Different approaches aiming to prevent the onset of alcohol use have been proposed. Promising strategies include the involvement of parents who play an important role, e.g. by setting rules regarding alcohol and other drugs,7 by strengthening family bonding10 and relationships11,12 and by monitoring their youth’s whereabouts.11

In a Cochrane Collaboration Systematic Review, Foxcroft et al.13 highlighted the Strengthening Families Programme 10–14 (SFP 10–14) as one of the most effective interventions for primary prevention of alcohol misuse in young people. The programme has been evaluated in efficacy studies in the USA, and has been proved effective in preventing youth’s tobacco, alcohol and illicit drug use.14,15 The SFP 10–14 (directed at children between the ages of 10–14 years and their parents) has been developed based on several theoretical models: the bio psychosocial vulnerability model,16 a resiliency model17,18 and a family process model linking economic stress and adolescent adjustment.19 The SFP 10–14 involves an interactive skills-building curriculum. Family relations are targeted by exercises designed to improve communication and discipline skills.20 Accordingly, we wanted to adapt the SFP 10–14 to Sweden, and to evaluate it here. However, social and cultural differences between the USA and Sweden mean that it can be problematic to transport evidence-based programmes from one country to another, and those positive results from US prevention programmes may not translate to Sweden.21–23 We first revised the programme for use in a general Swedish cultural context, adapting the materials and format to parents and young people in Sweden while at the same time retaining the SFP 10–14 theoretical and conceptual integrity.24 In a subsequent phase, we implemented and evaluated the Swedish version of the SFP 10–14 in a randomized controlled trial. Results in terms of parental participation and retention in the programme have already been described in a previous article.25

The aim of this article was to report on the effects of the Swedish version of the SFP 10–14 on substance use and other norm-breaking behaviours, 3 years after its delivery.

Methods

Study design

The study was a cluster-randomized controlled trial including schools in the Stockholm municipality in 2003–06. All the elementary schools in Stockholm (N = 226) were considered for participation in the study. Inclusion criteria were having grade 6–9 in the same school, and not having age-integrated classes. Out of the 60 eligible schools, 22 applied to participate in the study. These were
classified as schools of high (12 schools) or low (10 schools) socio-economic position on the basis of the average income of the population in the corresponding area, and then randomly assigned within the socio-economic position to the intervention or the control group. One intervention school and two control schools declined participation after randomization, leaving 10 intervention schools and 9 control schools. Five of the schools wanted to include more than one class per school in the study; hence, the final population consisted of students from 15 classes in the intervention group and 11 classes in the control group.

**Power and sample size**

According to a similar study, effect sizes of 0.30 can be expected; hence, 580 persons are needed to allow a detection of an effect size of 0.30 (95% power at the $P < 0.05$ level of significance, two-tailed test).

**Participants**

Participants in the study were 707 sixth-grade students (age 12), and their parents. Youth participation in the evaluation required the active consent of their parents, which was given by 83% of the parents. Thus, the final study sample included 587 students, 216 in control schools and 371 in intervention school (figure 1).

**Intervention**

This study involved a cultural adaptation of the SFP 10–14 (March 2001 edition) to Swedish conditions, including some modifications of the programme format, which were discussed and agreed with the programme’s first author, Dr Virginia Molgaard. The original programme consisted of seven sessions and four booster sessions. Each session contained one separate hour for parents and youth, and 1 h with parents and youth together as families. In our version, the first seven sessions, called part one, included six separately held sessions for youth and parents, and one joint family session. We turned the optional booster sessions into a regular part, called part two, and added one extra session. Hence, the second part consisted of four separate sessions for youth and parents, and one joint family session.

The Swedish version was to a large extent similar in content to the original SFP 10–14, except for some of the family session topics, which were omitted. The youth sessions included role-playing, peer resistance training and other practical skills training in a game-like fashion. The parent sessions were based on video films that illustrated typical interactions between parents and youth. Both parts of the programme closed with a family session including family projects as well as festivities. In the second part, we also added some material from our own production targeted to classroom, while the parents were mailed their questionnaires home. Reminders were sent to both youth and parents.

A questionnaire was sent to all principals in the control schools to check for other concomitant alcohol, tobacco and other drugs (ATOD) prevention activities.

To ensure programme fidelity, the group leaders filled out checklists after each session where they answered questions about the activities, if they had the right prerequisites and how the parents had reacted.

**Measures**

Socio-demographic measures from both children and parents included gender, age and being born in Sweden. Parents were also asked about their highest education, whether living with the target child full-time and whether working full-time.

**Being drunk–lifetime**

This measure was derived from the question: 'Have you been drinking any of the following so that you felt drunk?' The first statement was 'I have never been drunk', the following nine statements comprised different alcoholic beverages, e.g. light beer, strong beer, wine and liquor. A binary indicator of lifetime drunkenness was recoded as 1 in case of affirmative answer.

**Being drunk in the past 30 days**

Youths were asked at each assessment 'How many times during the past 4 weeks have you been drunk?' They answered by writing a number. For the purpose of the regression analysis this item was dichotomized into 'Any drunkenness' versus 'No drunkenness' in the past 4 weeks.

**Tobacco use**

Subjects were asked about their tobacco use. The response options were 'I have never been smoking tobacco', 'I have only tried', 'Sometimes, but not daily' and 'Every day or almost every day'. The items were recoded into a dichotomy variable. 'I have never been smoking tobacco' and 'I have only tried' were coded as 'no smoker'; 'Sometimes, but not daily' and 'Every day or almost every day' were coded as 'smoker'.

**Illicit drug use**

One question was asked about lifetime illicit drug use, with response options 'No' and 'Yes'. In the second follow-up, the response options were changed to 'No', 'Yes, once' and 'Yes, several times'. For this study, the item was recoded into 'No' and 'Yes'.

**Other norm-breaking behaviours**

This measure was analysed with an index derived from a 15-item scale, including questions about norm-breaking behaviours ranging from minor misdemeanours like cheating on a school test to more severe behaviours like robbery or burglary. The response alternatives for each question were 'no' coded 0, 'yes, once' coded 1 and 'yes, several times' coded 2. The 15 items were summed to form an index with a minimum of 0 and a maximum of 30. Cronbach’s alpha for this index was 0.86. Since the variable did not show a normal distribution, this item was analysed in its binary version 'Any norm-breaking behaviour lifetime' versus 'None'.

**Social load**

A social load index of city districts in Stockholm was derived from six factors. This index has been used in the city of Stockholm to provide a basis for distribution of extra resources to city districts.
The average score for the city of Stockholm was set to 100. In this study, social load was coded 'Low' for scores <100, and 'High' for scores >100. Social load in this study reflect the city district where the school is located, which does not correspond with the residential area in some cases.

**Statistical analyses**

Descriptive statistical analyses were performed to summarize the main characteristics of the study sample. The baseline equivalence between treatment conditions on demographic characteristics was tested using chi-square tests or t-tests for independent groups.

To evaluate the effectiveness of the programme, odds ratios (ORs) and their corresponding confidence intervals (95% CI) were estimated as measure of association between experimental conditions and behavioural outcomes at four time points. A two-level mixed-effects logistic regression model was fitted to account for the hierarchical structure of the data with students (level 1) nested within schools (level 2). All models were adjusted for the baseline status of the outcome. To check possible moderating effects, the analyses were repeated stratifying by socio-demographic

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**Figure 1** Flow diagram over four waves of data

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variables (i.e., gender, age and highest education of the responding parent, ethnicity of the child and social load of the area). Data were analysed on the basis of the intention-to-treat principle. All analyses were performed using the IBM SPSS statistics 18 and Stata 12.

We performed an in-depth analysis of the missingness mechanisms, using logistic regression to model the odds of missingness on the basis of several characteristics of the students. We also formally tested for differential missing pattern between treatment groups by including in the logistic models a cross-product interaction term between intervention condition and students’ characteristics and baseline behaviours.

We repeated the main analyses using the Statistical Analysis Software (Version 9.1.3) multiple imputation procedure with the Markov chain Monte Carlo method following the recommendation of Rubin.30,31 The imputation was performed separately for each group and time of measurement to preserve treatment effects. To quantify a possible attrition bias, we assessed the robustness of the programme effects under the extreme assumptions that missing values were either all negative (best case scenario) or all positive (worst case scenario).

Results

Baseline equivalence

Baseline characteristics of the study sample are shown in table 1. There was equivalence between the intervention and control group for all socio-demographic characteristics except for parent’s education, which was higher in the intervention group.

Outcomes of substance use and norm-breaking behaviours

As expected, smoking, alcohol and illicit drug use increased over time. In table 2, percentages of lifetime drunkenness, illicit drug use, current tobacco use and means for norm-breaking behaviours are presented for the intervention and control groups at the four time points. The overall prevalence of current smoking increased from 2% at baseline in grade 6 to 19% in grade 9. There was a significant increase in smoking in grade 9 for boys in the intervention group compared with boys in the control group; \( \chi^2(1) = 5.70, P < 0.05 \).

The prevalence of lifetime episodes of drunkenness doubled from 7% in grade 6 to 15% in grade 7 and 30% in grade 8, and involved nearly half of the sample in grade 9. There were no differences between boys and girls on the measure being drunk–lifetime, with the exception of eighth grade boys in the intervention group that had been drunk (lifetime) to a larger extent than boys in the control group; \( \chi^2(1) = 4.23, P < 0.05 \).

Illicit drug use was almost absent at baseline, but increased to 7% in grade 9. Distributions of substance use at baseline were similar in the experimental conditions. Norm-breaking behaviours were somewhat higher at baseline for the control group, but increased more for the intervention group than the control between grade 8 and grade 9; \( F_{(1,283)} = 3.72, P < 0.05 \). Table 2 also presents the programme effects estimated in multilevel models. No significant effects of the Swedish version of the SFP were found in the whole sample, neither in the preventive nor in the harmful direction.

In the stratified analyses, no significant differences in the effectiveness of the intervention on past 30-day drunkenness, illicit drug use and other norm-breaking behaviours were found between genders.

For the outcome drunkenness lifetime the programme showed a negative effect on boys at the 2-year follow-up, but this effect was not confirmed at the 3-year follow-up. A negative effect among boys was also found for smoking, only at the 3-year follow-up.

No moderating effects could be detected for any other socio-demographic variables (i.e., age and highest education of the responding parent, ethnicity of the child and the social load of the area). In fact, the interaction terms between intervention condition and demographic variables were not statistically significant for any variable (data not shown), indicating that the intervention effects did not differ by socio-demographic backgrounds.

Concurrent activities in control schools

Questionnaire sent to all principals in the control group to check for concomitant ATOD-activities showed that all of the control schools carried out some sort of ATOD-activity, such as an

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**Table 1 Baseline characteristics of the study sample**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention n (%)</th>
<th>Control n (%)</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>( P )-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender of child&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boy</td>
<td>189 (50.9)</td>
<td>103 (47.7)</td>
<td>0.58</td>
<td>1</td>
<td>0.446</td>
</tr>
<tr>
<td>Girl</td>
<td>182 (49.1)</td>
<td>113 (52.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socio-economic status&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High social load</td>
<td>74 (19.9)</td>
<td>33 (15.3)</td>
<td>1.99</td>
<td>1</td>
<td>0.158</td>
</tr>
<tr>
<td>Low social load</td>
<td>297 (80.1)</td>
<td>183 (84.7)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Child born in Sweden&lt;sup&gt;c&lt;/sup&gt;</td>
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<tr>
<td>Gender of parent&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>66 (20.6)</td>
<td>37 (20.1)</td>
<td>0.02</td>
<td>1</td>
<td>0.890</td>
</tr>
<tr>
<td>Female</td>
<td>254 (79.4)</td>
<td>147 (79.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent born in Sweden&lt;sup&gt;e&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent’s education&lt;sup&gt;f&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary school</td>
<td>14 (4.7)</td>
<td>21 (12.4)</td>
<td>10.58</td>
<td>2</td>
<td>0.005</td>
</tr>
<tr>
<td>High school</td>
<td>100 (33.3)</td>
<td>44 (25.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>186 (62.0)</td>
<td>105 (61.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living with target child full-time&lt;sup&gt;g&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working full-time&lt;sup&gt;h&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>44.4 (5.66)</td>
<td>43.2 (5.57)</td>
<td>2.35</td>
<td>495</td>
<td>0.019</td>
</tr>
</tbody>
</table>

<sup>a</sup> From youth’s questionnaires.

<sup>b</sup> An index derived from different key factors on social load, used in Stockholm where the mean load is 100.

<sup>c</sup> From parents’ questionnaires.
<table>
<thead>
<tr>
<th>Outcome variable</th>
<th>Baseline (n = 521)</th>
<th>1-year follow-up (n = 508)</th>
<th>2-year follow-up (n = 465)</th>
<th>3-year follow-up (n = 447)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention (%)</td>
<td>Control (%)</td>
<td>Intervention (%)</td>
<td>Control (%)</td>
</tr>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td></td>
<td>OR (95% CI)</td>
<td></td>
</tr>
<tr>
<td>Smokers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole sample</td>
<td>1.0</td>
<td>3.2</td>
<td>1.01 (0.36–2.81)</td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>0.6</td>
<td>1.1</td>
<td></td>
<td>0.51 (0.10–2.61)</td>
</tr>
<tr>
<td>Girls</td>
<td>1.3</td>
<td>5.0</td>
<td>1.55 (0.39–6.17)</td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>0.51 (0.10–2.61)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>1.55 (0.39–6.17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drunkenness lifetime</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole sample</td>
<td>16.7</td>
<td>13.2</td>
<td>1.39 (0.65–2.96)</td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>16.9</td>
<td>13.6</td>
<td>1.48 (0.48–4.53)</td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>16.6</td>
<td>12.8</td>
<td>1.61 (0.56–4.64)</td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>1.19 (0.71–1.99)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>1.00 (0.46–2.13)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illicit drug use lifetime</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole sample</td>
<td>3.8</td>
<td>3.7</td>
<td>1.00 (0.32–3.14)</td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>1.8</td>
<td>5.6</td>
<td>0.62 (0.11–3.35)</td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>6.0</td>
<td>2.0</td>
<td>1.75 (0.33–9.20)</td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>1.07 (0.33–3.52)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>0.71 (0.10–5.17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drunkenness past 30 days</td>
<td>0.02 (0.1)</td>
<td>0.05 (0.3)</td>
<td>0.09 (0.6)</td>
<td>0.06 (0.3)</td>
</tr>
<tr>
<td>Boys</td>
<td>0.06 (0.3)</td>
<td>0.05 (0.3)</td>
<td>0.06 (0.3)</td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>0.12 (0.7)</td>
<td>0.06 (0.2)</td>
<td>0.07 (0.2)</td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>0.27 (0.8)</td>
<td>0.15 (0.6)</td>
<td>0.19 (0.98–3.75)</td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>0.36 (0.9)</td>
<td>0.16 (0.5)</td>
<td>0.21 (0.88–5.53)</td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norm-breaking behaviours lifetime</td>
<td>2.0 (3.0)</td>
<td>3.0 (4.5)</td>
<td>3.9 (4.8)</td>
<td>4.2 (4.7)</td>
</tr>
<tr>
<td>Boys</td>
<td>1.8 (2.3)</td>
<td>4.5 (5.6)</td>
<td>4.8 (5.7)</td>
<td>4.8 (5.7)</td>
</tr>
<tr>
<td>Girls</td>
<td>1.4 (2.2)</td>
<td>2.1 (3.2)</td>
<td>3.5 (4.1)</td>
<td>3.5 (4.1)</td>
</tr>
<tr>
<td>Boys</td>
<td>1.05 (0.59–1.71)</td>
<td>5.6 (5.6)</td>
<td>0.70 (0.35–1.37)</td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>5.5 (5.5)</td>
<td>6.9 (6.5)</td>
<td>0.67 (0.27–1.64)</td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>5.2 (5.5)</td>
<td>6.9 (6.5)</td>
<td>0.67 (0.27–1.64)</td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>4.4 (4.4)</td>
<td>4.4 (4.4)</td>
<td>0.83 (0.34–2.06)</td>
<td></td>
</tr>
</tbody>
</table>

Multilevel models were used to estimate adjusted ORs.
*P < 0.05
a: Odds ratios adjusted for baseline status of the outcome.
invited lecturer, as a theme in ordinary curricula or a lesson by the school nurse, but none had a structured manual-based programme.

Representativeness of the cohort
We have compared our data with a yearly survey 'Stockholmsenkäter', which reaches all students in grade 9 in Stockholm. In 2006 ~11 500 students were surveyed. The alcohol consumption did not differ in our study compared with Stockholmsenkäter.

Missing data
The maximum number of missing values of the outcomes varied between 18% at baseline and 26% at the last follow-up. Missing data at the last follow-up was quantitatively equal between intervention and control groups. As expected, the students with missing values of the outcomes at the last follow-up were significantly more likely to be male and to have higher baseline prevalence of drunkenness compared with students who had answered the questionnaire. The interaction terms between intervention condition and baseline characteristics of the students were not statistically significant for any variable (data not shown), indicating that patterns of missingness were similar across experimental conditions. The sensitivity analysis and all analyses performed on imputed data confirmed results of the available case analysis, indicating no effectiveness of the prevention programme (data not shown).

Discussion
In this article, we have presented the evaluation of a Swedish version of the SFP 10–14. No significant differences in alcohol, tobacco, illicit drug use and norm-breaking behaviours were found between the intervention group and the control group. These findings are contrary to what Spoth et al.14,15 found in Iowa. Our findings can be discussed in terms of cultural adaptation, programme fidelity, contextual factors, efficacy and effectiveness.

When programmes are transported between countries and different cultural contexts, the requirements of researchers and practitioners are high to ensure programme fidelity, and at the same time make necessary cultural adaptations to make the programme work for local conditions. In our case we changed the programme format to make it suitable in Sweden.24 The original SFP 10–14 is usually delivered within public schools, churches or community centres in the evenings; with youth and parent sessions separately the first hour, followed by a joint family hour. In Sweden, schools were the best arena for delivering the programme, but because of practical reasons it was not possible to have both youth and parent sessions held in evenings. By splitting up the youth and parent sessions on day and evening, we lost some of the family components, even though we tried to make up for this by introducing links between the youth and parent sessions, and by adding extra weight on the content in the two existing family sessions. Possibly, the missing family parts are vital to the effectiveness of this programme.22 Nevertheless, we had been in contact with the programme developer, Dr Virginia Molgaard, when we adapted the Swedish version of the SFP 10–14, to ensure the quality of the programme. We included all core components. The videos and the manuals were almost identical in content to the original version. Parents and youth completed home assignments together and there were two joint family sessions.

Another aspect to consider is the fidelity of the facilitators to implement the programme as it was intended by the programme developers. In our study we had checklists, which the group leaders filled out after each session. Also, the SFP 10–14 is manual-based with all parts described and timed in detail. Furthermore, the videos in the parent sessions are assumed to contribute to high fidelity in the way they are constructed with timed breaks for discussions and activities.

Contextual differences between Sweden and the USA may have influenced the results of the evaluation. In the US evaluation of the SFP 10–14, the setting was in rural Iowa in contrast to the city of Stockholm in our study. We had a relatively high recruitment rate of parents (47%). Noteworthy is that our study included 12 sessions compared with seven in the US evaluation. In contrast to the USA, Sweden has a well-developed social welfare system, and there are relatively small disparities in social class. The absence of any impact could therefore be due to a ceiling effect, where it becomes difficult to show effects of this type of programme.

Similarly, contamination in the form of other effective preventive ATOD-activities in the control schools may diminish the differences in Sweden. In our study, we found that all the control schools had some sort of ATOD-activity going on, even if not any structured or manual-based programmes.

When programmes are tested by developers and researchers under optimal conditions, the effects are often superior compared with those of effectiveness trials carried out in real-life settings. The challenge of moving prevention programmes from efficacy to effectiveness studies is currently a topic of debate in the research world.33 One example of this can be found in the PROSPER Community-University Partnership Trial,25 where the authors did not find any effects on alcohol initiation when the SFP 10–14 was implemented in a real-world setting. Also, there is an ongoing discussion regarding a possible loss of fidelity when adapting programmes to local conditions.24 In many cases there is uncertainty about what the core components are, and also about the mediating factors.

A limitation of the study is that missing data were not negligible. The non-response mechanism depended on both the observed and the unobserved data, that is, data were likely not missing at random (NMAR) in the sense of Little and Rubin.26 This mechanism, although common in studies of alcohol use, is a source of concern for bias in the estimation of the intervention effect. However, missing data are unlikely to have undermined the internal validity of our findings. In fact, the absence of significant interaction between intervention condition and baseline behaviours reveals that patterns of missingness were similar across experimental conditions, a situation in which the mechanism is less likely to cause non-comparability between treatment groups and therefore to bias the results.32 Furthermore, a sensitivity analysis did not support the possibility of important bias.

Another limitation could be reporting bias due to self-reported data, even though similar results in substance use were shown in another survey conducted in Stockholm at the same time (Stockholmsenkäter). Moreover, there might be a selection bias since participating schools had to apply to be part of the study. However, schools were stratified on socio-economic position, and the principals did not know beforehand to which study arm they would be assigned to.

Conclusion
To conclude, we did not see any effects of the Swedish version of the SFP 10–14 on substance use among adolescents. Whether this result is due to contextual factors, fidelity factors, transportability factors or any other biases is unclear, and calls for more research in this field. Considerable resources are spent by states and municipalities on different prevention programmes, and it is crucial to find interventions that are beneficial and cost-effective.

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Key points
- This study examines the effects of a Swedish version of the Strengthening Families Programme 10–14, in a randomized controlled trial.
- The Swedish version has been culturally adapted to a Swedish context.
- No effects are found on adolescent’s use of alcohol, tobacco and other drugs.
- This study adds new knowledge to the field of public health interventions.

References


