

Parent participation in alcohol prevention: Evaluation of an alcohol prevention programme

Nordic Studies on Alcohol and Drugs

2017, Vol. 34(6) 456–470

© The Author(s) 2017

Reprints and permission:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/1455072517732276

journals.sagepub.com/home/nad



Frode Adolfsen

UiT The Arctic University, Tromsø, Norway

Henriette Kyrrestad Strøm

UiT The Arctic University, Tromsø, Norway

Monica Martinussen

UiT The Arctic University, Tromsø, Norway

Bjørn Helge Handegård

UiT The Arctic University, Tromsø, Norway

Henrik Natvig

University of Oslo, Norway

Martin Eisemann

UiT The Arctic University, Tromsø, Norway

Roman Koposov

UiT The Arctic University, Tromsø, Norway

Abstract

Aim: The main purpose of this study was to evaluate the effectiveness of the parental part of the Norwegian Unge & Rus (Youth and Alcohol) programme. The intervention was aimed at changing parents' rules and attitudes towards adolescent alcohol use, and their ability to talk with their adolescents about alcohol, as well as improving parents' relationships with and knowledge about

Submitted: 7 March 2017; accepted: 29 August 2017

Corresponding author:

Frode Adolfsen, Regional Centre for Child and Youth Mental Health and Child Welfare, UiT The Arctic University of Norway, 9037 Tromsø, Norway.

Email: frode.adolfsen@uit.no



Creative Commons CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-Non Commercial 4.0 License (<http://www.creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).

their adolescents. These topics were addressed during parent meetings at school. **Method:** The effectiveness of the parent programme was tested using a longitudinal quasi-experimental control group design. Parents completed four online questionnaires $N = 1166$ at T1 in 2011 and $N = 591$ at T4 in 2013. Mixed models with observations nested in individuals were used to test the difference in rates of change between the groups. **Results:** Parents in both groups reported strict rules and attitudes towards alcohol use. There were no significant differences in the changes between the two parent groups in terms of rules and attitudes at the three follow-up time points. The parents in the intervention did not change significantly compared to the parents in the comparison group on other alcohol-related questions. **Conclusions:** Parents are important facilitators for the transmission of alcohol-related attitudes and rules. However, our study did not show significant differences between changes experienced by the intervention group and those of the comparison group for the main outcome variables, such as rules, attitudes and talking about alcohol with their adolescents.

Keywords

adolescents, alcohol prevention, parents, prevention

Background

Epidemiological research has indicated that the consequences of underage drinking can be severe for both adolescents and their families (Hanson & Li, 2003). Alcohol use among adolescents may also affect brain structures and lead to cognitive and behavioural changes (Alfonso-Loeches & Guerri, 2011). The social, economic and health consequences of underage drinking include involvement in accidents, unplanned pregnancies, and failure at school (Spoth, Greenberg, & Turrise, 2008). Drinking, particularly in higher quantities, exposes young people to risks including involvement in accidents and other negative outcomes (Gruber, DiClemente, Anderson, & Lodico, 1996; Zucker, Donovan, Masten, Mattson, & Moss, 2008). Thus, it is important to prevent and delay the onset of drinking among young people by implementing effective interventions.

Data from the large European School Survey Project on Alcohol and Other Drugs, 2015 (Kraus, 2016) has shown that drunkenness among adolescents is significantly related to harmful consequences such as trouble with the police and engaging in regretful and unprotected sexual intercourse (Kraus, 2016;

Lavikainen, Ahlstrom, Metso, Nevalainen, & Lintonen, 2008).

The ESPAD survey shows that 80% of European 15- and 16-year-olds have drunk alcohol. Fifty seven per cent of Norwegian adolescents of the same age reported having used alcohol (Kraus, 2016). In a Norwegian survey 25% of 15- and 16-year-olds reported having been drunk during the past year (NOVA, 2015). In Norway, 5% more girls than boys reported alcohol use during the last 30 days (Kraus, 2016). The overall country trend analyses from 1999 to 2015 show a decreasing lifetime alcohol use among Norwegian adolescents. These surveys report a relatively high level of alcohol use among adolescents and indicate that preventive measures are clearly needed (Kivimaki et al., 2014; Spoth et al., 2008).

In a systematic review by Foxcroft and Tsertsvadze (2011), the effectiveness of family-based preventive programmes, parenting skills, parenting support, clear rules and monitoring were investigated. Most studies showed small positive effects, and persistence in the medium to longer term of alcohol misuse in young people. Recommendations from the review emphasise the importance of working with both adolescents and their parents to

prevent underage drinking (Foxcroft & Tsertsvadze, 2011). When it comes to alcohol prevention, interventions focusing on both the parents and the adolescents have shown better effects than those focusing only on the child or adolescent (Spoth et al., 2008). These findings are supported by Petrie and colleagues, showing effects on alcohol use in a programme emphasising active parental involvement on developing social skills and self-regulation for the adolescents (Petrie, Bunn, & Byrne, 2007). Previous research findings have indicated that parents constitute an important factor in preventive measures (Koutakis, Stattin, & Kerr, 2008; Ryan, Jorm, & Lubman, 2010; Spoth et al., 2008). Limited family support and poor parental control, combined with permissive parental attitudes towards alcohol, are predictive of higher levels of adolescent drinking (Foxcroft & Lowe, 1997). Results from a Norwegian study on drinking habits among parents showed that adolescents are more likely to drink if they have witnessed their parents intoxicated (Haugland, Strandheim & Bratberg, 2012). Another family study found an increasing correlation between alcohol use among parents and offspring and related problems from the age of 14 to 17 (Saunders, McGue, Iacono, & Elkins, 2017).

Parents are important facilitators for the behaviour and attitudes of their children when it comes to alcohol use (Ellis, Zucker, & Fitzgerald, 1997; Mares, Lichtwarck-Aschoff, Burk, van der Vorst, & Engels, 2012). A Swedish study showed that working through parents proved to be an effective way of reducing underage drinking (Koutakis et al., 2008). A review based on 77 studies indicated that programmes aimed at reducing risk factors and promoting protective factors in the family were successful in reducing subsequent drinking among adolescents. This review identified eight predictors of reduced levels of drinking by adolescents, including parental modelling, provision of alcohol, parental disapproval, general discipline, monitoring, relationship, support and general communication (Ryan et al., 2010).

Parents play an important role in the socialisation process of their adolescents, in addition to the transfer of attitudes towards certain issues in their lives (Maccoby, 1992). Research has shown that parents setting rules regarding alcohol may prevent adolescents from drinking (Koning, van den Eijnden, Engels, Verdurmen, & Vollebergh, 2011; Koutakis et al., 2008; Van Der Vorst, Engels, Meeus, & Deković, 2006). In two reviews of risk factors for adolescent drinking, parents' relationship to their adolescent and parents' approval of drinking were the strongest risk factors for young people's initiation of alcohol use combined with monitoring of the adolescent (Donovan, 2004; Torsheim, Sorlie, Olseth, & Bjornebekk, 2015). Other studies have shown that parents' permissiveness to alcohol was related to adolescents' initiation of drinking at a younger age (Kosterman, Hawkins, Guo, Catalano, & Abbott, 2000; Ryan et al., 2010).

Parental factors such as a good relationship with the adolescent in addition to adolescents' individual characteristics such as high levels of impulsivity and aggression, anxiety and hopelessness have been reported as risk factors for early alcohol initiation (Adolfson et al., 2014; Comeau, Stewart, & Loba, 2001; Soloff, Lynch, & Moss, 2000). Numerous studies have indicated that environmental, genetic, and developmental factors all influence behavioural outcomes such as adolescent drinking, often involving a complex interplay (Belsky, Conger, & Capaldi, 2009; Masten, Faden, Zucker, & Spear, 2008; Zucker et al., 2008).

Parental alcohol attitudes and norms are part of the complexity of alcohol prevention among adolescents (Amato et al., 2011). Some research on intervention programmes targeting the parents' role in adolescent drinking has shown a promising effect on parental attitudes and adolescent onset of alcohol (Koning, Engels, Verdurmen, & Vollebergh, 2010; Koutakis et al., 2008; Mares et al., 2012). A meta-analysis of nine family interventions involving parents showed a significant overall mean effect in reducing alcohol initiation

among adolescents ($OR = 0.71$) and frequency of alcohol consumption (Cohen's $d = 0.25$). For three of the interventions the effects still persisted after 48 months (Smit, Verdurmen, Monshouwer, & Smit, 2008).

The Unge & Rus (Youth and Alcohol) programme

The Unge & Rus programme is a universal Norwegian school-based alcohol and drug prevention programme for adolescents in the eighth grade and their parents. An evaluation of a previous version of the programme that only included the adolescents, called Youth and Alcohol, has shown positive results as concerns alcohol use among adolescents (Wilhelmsen, Laberg, & Klepp, 1994). This and other evaluations of school-based prevention programmes, were criticised by Pape in 2009. The critique was related to lack in external validity, selective reporting of findings and the problem with evaluation done by program developers themselves (Pape, 2009). A longitudinal evaluation of the adolescent part of the programme showed no significant changes between adolescents in the intervention group and a comparison group who received the standard curriculum at school (Strom et al., 2015).

The parental role in the programme was added to the student part in 2003 and has not previously been evaluated. The overall aims for the parental part of the programme are to: (1) strengthen attitudes towards and rules about alcohol; (2) increase parents' ability to talk to adolescents about alcohol; and (3) set clear limits for alcohol use. The rationale of the parental part of the programme is based on social psychology and social learning theory, which regard alcohol use as being influenced by the environment and parents' attitudes towards alcohol (Bandura & McDonald, 1963). Including parents in alcohol prevention programmes is supported by other studies on antisocial behaviour and drug use (Smit et al., 2008; Spoth, 2008).

The main goals for the student part were to help them: (1) obtain knowledge about alcohol and the ability to think critically about its use; (2) strengthen attitudes against the use of alcohol; (3) reinforce the ability to say no to alcohol; and (4) delay the first use of alcohol.

The first parent meeting takes place without the adolescents, while the second meeting includes them. Class teachers are responsible for organising the parent meetings along with the parent contact for the class. In the first meeting, parents are placed in groups and encouraged to discuss attitudes and practice related to adolescents' alcohol use, by means of cases presented by the teacher. The topics addressed in the parent-student meeting comprise rules and attitudes towards alcohol use. The parent-student meeting operates under the headlines, "the compositions of groups" and "written agreements" (Steinkjær, 2008). The groups are composed of parents and adolescents; however, the parents are not meant to be in the same group as their own adolescents to discuss rules and attitudes regarding alcohol. The meeting duration is about two hours. The aim is to identify and agree on common attitudes and limits for adolescents' alcohol use, which should result in a contract between the adolescents and their parents.

The programme owner, Norwegian Knowledge Center for Drugs (KoRus North), has developed the goals for the entire programme, including the parents' role in the programme. Estimates indicate that approximately 80 (about 8% of total) schools in Norway use the programme, at no costs (Henriksen, 2012). The teachers are responsible for implementing the programme and are offered an eight-hour course including both theory and practical training on how to work with the programme. The training is related to the overall programme, but the training is not mandatory for running the programme. Workshops have been offered for about ten years and provided by the programme owner. The training is given all over the country depending on the number of new schools starting up. The terms and details

of the training are specified in written agreements between the schools and the programme owner. From a total of 27 teachers in our study, 10 teachers have participated in the training seminar for Unge & Rus over the past two years. Some schools collaborate with local people working on preventive alcohol and drug issues, who are invited to talk to the parents about the alcohol situation among adolescents. These may include a healthcare nurse, a police officer from a preventive unit or a local alcohol and drug coordinator (Henriksen, 2012).

The current study

Our study is an evaluation of parents' role in a preventive programme conducted among Norwegian adolescents and their parents.

The specific outcome variables of the current study are closely related to the programme goals, including: (1) parents' attitudes and rules regarding adolescents' alcohol use, (2) how often parents' have talked about the risks of drinking alcohol, (3) parents' ability to talk with their adolescents about alcohol, (4) parents' talking with other parents about setting limits on alcohol use of their adolescents, (5) parents' relationships with their adolescents, and (6) parents' knowledge about their adolescents' use of spare time.

Method

Procedure

Data for this study were collected in a longitudinal evaluation project called W8 (wait), with the purpose of evaluating the effectiveness of the Unge & Rus programme used in Norwegian high schools (Strom et al., 2015). The effects of the universal prevention programme on parents were tested through a quasi-experimental pre/post-test design with an intervention group and a comparison group of parents. Data were collected on four occasions (see Figure 1). The purpose of the present study was to evaluate the effect of the intervention on parental outcome

variables such as attitudes, rules and talking about alcohol related to adolescent drinking. The study used a quasi-experimental longitudinal design to test differences between the rate of change between an intervention group of parents and a comparison group on outcome variables assumingly being related to the adolescents' alcohol use. We expected that parents' participation in the programme would change both their attitudes to alcohol use and their skills in addressing the issue with their adolescents.

Information about the parents' participation and engagement in the programme was collected by asking parents and teachers, as part of the T2 survey after running the programme. Information about the study was provided by letter, and the questionnaires were completed electronically via Questback, with baseline data collected in January 2011. The post-test was conducted in May 2011 with a first follow up in May 2012 and the last follow up in May 2013. Questionnaires at every data collection were sent to all parents who had consented to participate at the beginning of the study. Parents received a reminder via email if they had not responded within two weeks after each scheduled data collection. To improve the response rate after T2, the participating parents were entered into a prize draw to win one of two iPads.

Recruitment

The parents in this study were recruited through their adolescents and the participating schools. The intervention group was recruited from schools in the county of Oslo. An open invitation was sent to all junior high schools, a total of 47 schools, and 24 accepted the invitation. The comparison group was recruited from neighbouring municipalities in the county of Akershus. A total of 44 schools were invited and a total of 17 participated. The programme was mandatory from 2006–2016 for all junior high schools in Oslo, the main capital in Norway. Hence, Oslo was chosen to provide the intervention group. The county of Akershus is

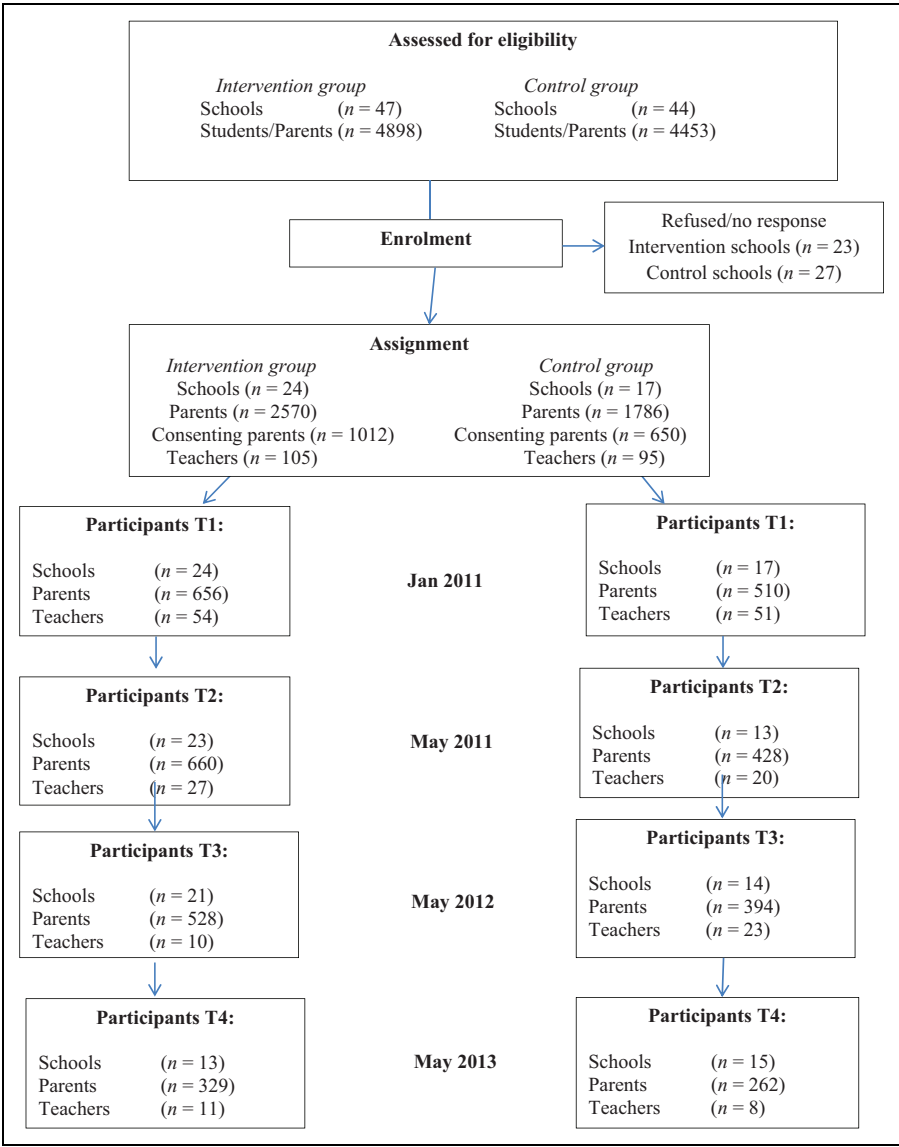


Figure 1. FlowParents.

similar to Oslo in terms of the size of school, geographical location and some socio-economic variables. Many of the invited schools did not respond to the invitation, and some declined due to the lack of time. All parents were recruited through the schools along with the adolescents. Signed consent forms were returned to the schools and forwarded to the project

administration at UiT, The Arctic University of Norway. The Regional Committee for Medical and Health Research Ethics approved the study.

Participants

From the 91 schools invited to participate in the study, a total of 41 accepted. The rest of the

Table 1. Descriptives of the parents.

Variable	Intervention group (N = 592–656)	Control group (N = 460–510)
Age: n (%)		
31–40 years	94 (15.6)	75 (16.2)
41–50 years	419 (69.4)	342 (74.0)
> 51 years	90 (14.9)	45 (9.7)
Mothers n (%)	440 (72.8)	345 (74.7)
Living with the adolescent n(%)		
All the time	532 (88.5)	404 (87.4)
Half of the time	67 (11.1)	54 (11.7)
Religion n (%)		
Christian	462 (76.5)	383 (82.9)
Muslim	15 (3.1)	1 (0.9)
Education level n (%)		
*Low (≤ 4 years)	145 (24.2)	109 (23.6)
High (> 4 years)	456 (75.8)	253 (76.4)
Total family income >700.000 Nkr	427 (72.2)	348 (75.6)

Note. Using X^2 test showed no significant difference between the intervention and the comparison group on chosen variables, except the variable education level low. Nkr = Norwegian kroner.

invited schools either provided no response, or refused to participate due to lack of time and resources, or because they were participating in other programmes. Both the adolescents and their parents had to submit consent forms in order to be included in the study.

A total of 1166 parents participated in the study. Descriptive information about the parents is provided in Table 1 based on data from baseline.

A total of 4356 invitations were sent home with the adolescents to their parents, out of whom 1662 agreed to participate. The total baseline response rate for parents completing the consent form was 70%. Respondents of the baseline questionnaire comprised 38% of the total number of parents involved. At follow up the response rate was 65% for the intervention group and 66% for the control group, based on the total number of parents who had agreed to be included in the study (see Figure 1). At

time interval 3, the response rate was 55% for the intervention group and 61% for the control group, respectively. At time interval 4, the response rate decreased to 33% in the intervention group and 40% in the control group.

Attrition analyses

As shown in Figure 1, the recruitment of parents for T1, T2, T3 and T4 was 1166, 1088, 922 and 591 parents, respectively, resulting in a response rate of 51% across waves. The parents were recruited from 41 schools at T1 and from 28 schools at T4. Parents who dropped out on post-test were compared to parents who completed all time points on several essential study variables, such as educational level, family income, religion and attitudes towards alcohol. For religion ($X^2 = 11.70$, $p = .003$) and education ($X^2 = 15.03$, $p = .005$) there were significant differences between the group that had completed all time points and the group that had completed only pre-test and one other time point. Parents with lower levels of education (less than four years) were more likely to drop out of the survey than parents with higher levels of education. In addition, Muslim parents were more likely to leave the programme after pre-test than parents of a Christian faith.

Measures

The online self-report questionnaire included demographic variables (gender, educational level, etc.) and various scales assessing parental attitudes, rules and behaviour.

Parents' relationship to their adolescent was assessed by using the Alabama Parenting Questionnaire scale (Shelton, Frick, & Wootton, 1996), which had been translated into Norwegian by the Norwegian Health Institute. The response categories ranged from 1 to 3, as follows: 1 = rarely, 2 = sometimes, or 3 = often (e.g., "It seems like my child and I always are struggling with each other"). The scale consists of eight items with an internal consistency of 0.84.

Five items were developed for this study with response categories ranging from 1 (totally disagree) to 5 (totally agree) for parental attitudes and rules towards alcohol (e.g., “It is important to focus on adolescent alcohol use”, and “My adolescent is asked about drinking when he/she comes home late”). Higher scores indicate more restrictive attitudes towards alcohol. The internal consistency for this scale was 0.68.

Knowledge about their adolescent (monitoring) was assessed by using the Keeping Tabs Questionnaire from the Study of Early Child Care and Youth Development (SECCYD) study, which has been translated into Norwegian by the Norwegian Health Institute, including five items on a four-point scale ranging from 1 (knows very little), 2 (knows a little), 3 (knows a lot) to 4 (knows everything) (e.g., with whom he/she is spending his/her leisure time). The internal consistency for this scale was 0.85.

Other questions. To assess parents’ responsiveness to the goals of the programme, the following three single questions were statements were given:

Statement one: “I think it’s easy to talk to adolescents about alcohol use”; with the response categories 1 = very easy, 2 = quite easy, 3 = either easy or difficult, 4 = quite difficult, 5 = very difficult.

Statement two: “I have discussed alcohol limits with other parents”; assessed on a three-point scale, 1 = no, 2 = yes, once, 3 = yes, several times.

Statement three: “I have talked about the dangers of alcohol with my son/daughter during the last three months”; with the response categories, 1 = yes, 2 = no.

Parents’ and teachers’ participation and engagement in the programme. Parents were asked whether they have participated in no, one or two parent meetings. Three questions related to participation and engagement were given in a survey to the teachers after running the programme. On a five-point scale from Alpers et al. (2009), 1 = at a very low level to 5 = at

a very high level, teachers answered how engaged the parents were in the meetings. Teachers were also asked if they felt that the programme had been helpful in setting clear limits for alcohol use for the adolescents (yes/no). Finally the teachers were asked for their motivation for running the programme, which they rated on a five-point scale from 1 (not at all) to 5 (at a very high level).

Statistical analyses

Data were analysed using the Statistical Package for Social Sciences (SPSS 23.0). Baseline differences between the two groups on variables such as education and family income were examined using chi-square tests. There were no significant differences between parents in the intervention group and the comparison group in terms of demographic variables. In order to examine the effectiveness of the intervention, different types of mixed models were used. For single items, the general linear mixed model (GLMM) was used to test differences in the rate of change between the intervention and the comparison group. Group-by-time interactions on continuous outcome variables were analysed using linear mixed models (LMM). Linear mixed models and GLMM were used because data are hierarchical, with observations (level one) nested in individuals (level two). The time variable was coded as continuous at four time points: pre-test, 4, 16 and 28 months. The longitudinal analysis used full information maximum likelihood to include parents with missing observations on some of the occasions (Hox, Maas, & Brinkhuis, 2010).

Two-level analyses with observations nested in individuals were conducted. A third level (class) was not used because of the low intra-class correlations (ICC) and low design effect (Muthen & Satorra, 1995) for this level.

Results

Demographic characteristics of the parents, such as age, income, education, religion and

Table 2. Descriptive results, linear mixed models (LMM) and general linear mixed model (GLMM) for long-term effect.

Measures	T1		T2		T3		T4		GxT eff. (t)
	I M (SD)	C M (SD)	I M (SD)	C M (SD)	I M (SD)	C M (SD)	I M (SD)	C M (SD)	
Relationship	1.22 (0.56)	1.42 (0.55)	1.18 (0.65)	1.63 (0.63)	1.20 (0.66)	1.66 (0.64)	1.29 (0.46)	1.64 (0.43)	-0.05 (-0.78)
Attitudes/rules	4.72 (0.82)	4.77 (0.75)	4.71 (0.69)	4.75 (0.79)	4.73 (0.41)	4.74 (0.65)	4.76 (0.33)	4.77 (0.31)	0.08 (1.07)
Knowledge	3.61 (0.55)	3.37 (0.54)	3.62 (0.51)	3.44 (0.57)	3.59 (0.58)	3.24 (0.51)	3.56 (0.45)	3.32 (0.42)	0.08 (1.38)
Single items:									F (p)
Easy to talk	1.73 (0.80)	1.69 (0.79)	1.73 (0.77)	1.73 (0.79)	1.75 (0.80)	1.6 (0.77)	1.74 (0.80)	1.64 (0.78)	0.26 (0.61)
Discalc. limits	1.55 (0.77)	1.46 (0.76)	1.73 (0.76)	1.53 (0.88)	1.52 (0.81)	1.67 (0.87)	1.70 (0.80)	1.56 (0.82)	5.87 (0.02)
Talk about alc.	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	
In %	71/29	63/37	76/24	63/37	73/27	73/27	79/21	67/33	-0.407 (0.68)

Note. I = intervention group N = 592-656; C = control group N = 460-510.

Relationship (1-3), Attitudes (1-5), Knowledge (1-4), Talk about alcohol (0-2), Easy to talk (1-5), Discussed alcohol limits (1-3).

GxT = Group x Time effect. Estimates of fixed effects and independent t-test in parentheses.

amount of time living with their adolescents are presented in Table 1. Baseline and follow-up statistics on the dependent variables for up to 28 months are presented in Table 2. Intra-class correlations were calculated to check the level of dependency within classes. Intra-class correlations yielded low between-class proportions of the total variance (0.4–8.5%). The design effect varied from 1.02 to 1.46 and, based on this, we decided to conduct two-level analyses.

Parents' attitudes and rules

At baseline, there was no significant difference between the intervention and comparison parents in attitudes towards alcohol ($t = -1.96$, $p = .05$). After comparing attitudes between the intervention and comparison parent group, the results showed no significant group-by-time effect.

Talk about the dangers of alcohol

On this question the intervention and comparison groups differed at baseline ($t = 3.05$, $p < .002$). There were no change differences between the two groups over time.

Easy to talk about alcohol with adolescents

On this question the two parent groups did not differ at baseline ($F = 0.05$, $p = .824$) and remained unchanged over time.

Discussion of alcohol limits with other parents

Analysis at baseline for this question showed that the intervention and comparison groups differed ($F = 15.21$, $p < .001$). There was no group-by-time interaction for this variable, indicating that the baseline difference was maintained on the follow-up occasions.

Parents' relationship with their adolescents

The parent–adolescent relationship variable showed no baseline difference between the

groups ($t = -1.08$, $p = .28$). There was no significant time-by-group effect for this variable (Table 2).

Knowledge about the adolescents

Parents' knowledge about the adolescents' leisure time showed significant differences between the groups at baseline ($t = 10.47$, $p < .001$). There was no time-by-group effect.

Participation and engagement in the programme

In our sample, 48% of the parents in the intervention group participated in one parent meeting, while 31% attended two meetings and 17% had not joined any parent meetings related to the Unge & Rus programme at school. On the question whether the teachers felt that the meetings would be helpful for parents in setting clear limits for alcohol use for the adolescents, a total of 70% of the teachers endorsed this statement. Following parent meetings, the teachers' answer regarding parents' engagement resulted in a score of 3.63 ($SD = 0.69$) on a five-point scale from (1) at a very low level to (5) at a very high level. Assessing teacher's motivation for running the programme the mean score was 2.33 ($SD = 1.57$), on a five-point scale ranging from (1) not at all to (5) at a very high level.

Discussion

The findings from our study showed that the Unge & Rus programme did not change parents' attitudes and rules regarding alcohol use among adolescents. Parents' rules and attitudes towards alcohol were quite strict at baseline in both groups ($M = 4.72$ for the intervention group and $M = 4.77$ for the comparison group on a five-point scale). With these high scores at baseline in both groups, a further increase of the scores could not be expected. At the 28-month follow up, when the adolescents were 15 or

16 years old, parental attitudes and rules were still strict ($M = 4.76$ and $M = 4.77$).

According to the parents they had a good relationship with their adolescents. The mean score on the relationship variable increased in both groups during the study period, indicating that the parents described their relationship with their son or daughter in even more positive terms than at baseline, but there were no time-by-group effects for the variable. A good parent-child relationship is also one of the preventive measures included in the recommendations from the consensus study on preventive alcohol strategies (Ryan et al., 2010).

Parents in both the intervention group ($M = 3.61$) and the comparison group ($M = 3.37$) reported knowing a great deal about the adolescents' activities in their spare time. During the 28-month period of the study, there was no significant difference in the rate of change between the parents from the intervention group regarding knowledge about their adolescents' spare time and the comparison group.

The alcohol-related questions to the parents revealed that talking with adolescents about alcohol is a common thing to do. The intervention and comparison groups did not differ, either at baseline or follow up, regarding this question.

Furthermore, the evaluation showed that parents in the intervention group did not differ from the comparison group at baseline or follow up regarding the discussion of alcohol limits with other parents. One explanation for the lack of effect may be related with the use of the programme. In spite of that, all teachers in the intervention schools ($N = 54$) were invited to the training session the same semester as pre-test were arranged, only 10 teachers participated. Lack of fidelity measures of the programme may also influence the results. The parents participated in one or two meetings discussing alcohol-related questions and 17% of the parents did not participate in any of the meetings. Compared to a similar parent programme, the Örebro Prevention Programme, which includes five parent meetings attended

by project workers, may also explain the lack of effect of the Unge & Rus programme.

The study showed that about 70% of the parents throughout the study had talked to their adolescents about alcohol. Several studies have shown that parents are concerned about adolescents' alcohol behaviour and are, therefore, motivated to participate in such studies (Koutakis et al., 2008; Rohrbach, Grana, Sussman, & Valente, 2006). In our study, the comparison group was selected before the study began which makes it reasonable to assume that parents who recruited themselves were more interested in the topic and therefore willing to participate in our survey.

From the comparison schools 10% reported having used the Unge & Rus programme during the last two years. A total of 45% had conducted a smoke free campaign, and 45% reported that no specific alcohol curriculum had been given (Strøm et al., 2015).

In our study, 80% of the teachers reported alcohol as a topic in which parents are easily engaged, indicating that parents are interested in the alcohol use of their adolescents. This finding, in addition to the fact that parents play an important role in alcohol preventive work, strengthens the meaning of parents as key facilitators in changing adolescent drinking (Koning, van den Eijnden, Verdurmen, Engels, & Vollebergh, 2011). In a report by Henriksen (1999) from two high schools, parents expressed positive experiences, reporting that the Unge & Rus programme led to fruitful discussions between the parents and the adolescents. Additionally, in a qualitative study of the programme examining parental norms on alcohol debut, there was a general consensus among parents that the 18-year-old age limit for alcohol consumption should continue to be enforced (Henriksen, 2012).

Our study on the Unge & Rus programme showed no effect on parents related to the main goals of the programme. From the outset, parents participating in our study had strict rules and attitudes towards alcohol, in addition to talking with their adolescents about the dangers

of alcohol. Parents maintained these strict rules and attitudes throughout the study. We can assume that the parents were strengthened in their beliefs that preventive alcohol work is important in developing healthy alcohol attitudes. The parental part of the programme was added in 2003, and information about whether the programme and alcohol trends and attitudes have changed according to each other is missing. This may partly explain the poor results of the programme. The topic of the Unge & Rus programme is similar to that of other studies and recommendations for preventive work (Ryan et al., 2010; Smit et al., 2008).

The importance of preventive work for avoiding negative consequences of drinking among adolescents is indisputable. Programmes aimed at influencing parental attitudes and rules to prevent adolescents from drinking alcohol are promising. Strict anti-alcohol rules for adolescents, combined with good relationships and parenting skills, have proven to be a good approach in developing low-risk drinking habits and a healthy adolescent life style (Mares et al., 2012).

Strengths and limitations

One strength of this study is its longitudinal design with four time points. The recruitment procedure in the study may have led to a lower rate of participation as many of the parents may not have received information about the study and could not fill out the consent form. The adolescents received the invitation letter at school and returned the consent form with parents' signature. Some adolescents may have chosen not to inform their parents for various reasons. It may also be the case that parents who agreed to participate were more interested in the topic, had a better relationship with their children and were accordingly less likely to benefit from the discussions than parents not attending such meetings.

Another limitation in our study is related to internal validity and the fact that the groups were not randomised. Furthermore, because the

study was quasi-experimental rather than randomised, it may suffer from selection bias. No differences in baseline characteristics were found between the two groups, indicating that the groups were similar in terms of important demographic variables. However, there is always a risk that the groups may have differed in other ways. During the period from pre-test to follow up there may have been some spill-over effects between parents since the intervention group in Oslo and the comparison group in Akerhus are not far in distance from each other.

Only 10 of the 27 teachers from our study reported participating in the training seminar for the Unge & Rus programme. Unfortunately, we have no information about the reasons of non-participants. Henriksen (2012) discussed the idea that teachers might have different motivation if they felt that it was part of their job to work with programmes to prevent alcohol use among adolescents. Compared to the Örebro Prevention Programme it seems that they used more time with the teachers in the pre-implementation phase to support the programme and allocated time for parent meetings (Koutakis et al., 2008).

In future research, data comparing environmental, parental and adolescent variables would be preferable in order to identify mediators that might affect hazardous adolescent drinking. Additionally, information regarding teachers' experience with the programme may be useful to include in further studies. Preventive alcohol work should be based on interventions addressing factors which have emerged in various studies, i.e., parental rearing (Ryan et al., 2010). Furthermore, there might be ceiling effects on some of the measures used in the study. Future studies should apply more elaborated assessments of parental differences concerning attitudes, rules and behaviour. Teachers' lack of training in the programme might also affect the quality of the fidelity of the programme.

Conclusions

Results from this study showed no significant group difference for the longitudinal trajectories

for the main outcome variables for parents in the programme. The lack of effectiveness may be caused by the relatively low extent of the programme with only a few parent meetings, in addition to a lack of training for the teachers responsible for implementing the programme. Teachers in our study reported that parents were genuinely engaged in the topic of alcohol related to their adolescents. More efforts should be made to reach out to vulnerable groups and make even more parents aware of the importance of working in partnership with schools to prevent alcohol use among adolescents.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors have declared receipt of the following financial support for the research, authorship, and/or publication of this article:

The Norwegian Directorate of Health and UiT The Arctic University of Norway financed the study.

References

- Adolfson, F., Strom, H. K., Martinussen, M., Natvig, H., Eisemann, M., Handegard, B. H., & Koposov, R. (2014). Early drinking onset: A study of prevalence and determinants among 13-year-old adolescents in Norway. *Scandinavian Journal of Psychology*, 55(5), 505–512. doi:10.1111/sjop.12151
- Alfonso-Loeches, S., & Guerri, C. (2011). Molecular and behavioral aspects of the actions of alcohol on the adult and developing brain. *Critical Reviews in Clinical Laboratory Sciences*, 48(1), 19–47. doi:10.3109/10408363.2011.580567
- Alpers, K., Altmann, D., An der Heiden, M., Bartels, C., Batzing-Feigenbaum, J., Becker, A., & Te, N. I. A. H. N. I. (2009). Description of the early stage of pandemic (H1N1) 2009 in Germany, 27 April–16 June 2009. *Eurosurveillance*, 14(31), 2–5.
- Amato, L., Davoli, M., Vecchi, S., Ali, R., Farrell, M., Faggiano, F., & Chengzheng, Z. (2011). Cochrane systematic reviews in the field of addiction: What's there and what should be. *Drug and Alcohol Dependence*, 113(2–3), 96–103. doi:10.1016/j.drugalcdep.2010.08.003
- Bandura, A., & McDonald, F. J. (1963). Influence of social-reinforcement and behavior of models in shaping children's moral judgments. *Journal of Abnormal Psychology*, 67(3), 274–281. doi:10.1037/h0044714
- Belsky, J., Conger, R., & Capaldi, D. M. (2009). The intergenerational transmission of parenting: Introduction to the special section. *Developmental Psychology*, 45(5), 1201–1204. doi:10.1037/a0016245
- Comeau, N., Stewart, S. H., & Loba, P. (2001). The relations of trait anxiety, anxiety sensitivity, and sensation seeking to adolescents' motivations for alcohol, cigarette, and marijuana use. *Addictive Behaviors*, 26(6), 803–825. doi:10.1016/S0306-4603(01)00238-6
- Donovan, J. E. (2004). *Adolescent alcohol initiation: A review of psychosocial risk factors*. Journal of Adolescent Health, 35(6), 529, e527–518. doi:10.1016/j.jadohealth.2004.02.003
- Ellis, D. A., Zucker, R. A., & Fitzgerald, H. E. (1997). The role of family influences in development and risk. *Alcohol Health & Research World*, 21(3), 218–226.
- Foxcroft, D. R., & Lowe, G. (1997). Adolescents' alcohol use and misuse: The socializing influence of perceived family life. *Drugs-Education Prevention and Policy*, 4(3), 215–229.
- Foxcroft, D. R., & Tsertsvadze, A. (2011). Universal school-based prevention programs for alcohol misuse in young people. *Cochrane Database of Systematic Reviews* 5. doi:10.1002/14651858.Cd009113
- Gruber, E., DiClemente, R. J., Anderson, M. M., & Lodico, M. (1996). Early drinking onset and its association with alcohol use and problem behavior in late adolescence. *Preventive Medicine*, 25(3), 293–300. doi:10.1006/pmed.1996.0059
- Hanson, G. R., & Li, T. K. (2003). Public health implications of excessive alcohol consumption. *JAMA – Journal of the American Medical Association*, 289(8), 1031–1032. doi:10.1001/jama.289.8.1031
- Haugland, S. H., Strandheim, A., & Bratberg, G. (2012). Er risikofylt rusmiddelbruk vanligere

- blant ungdom som har sett foreldrene beruset? [Is high-risk use of intoxicants more common among adolescents who have seen their parents intoxicated?] *Tidsskriftet, Den norske legeforening*, 132, 410–413. doi:10.4045/tidsskr.11.0623
- Henriksen, O. (1999). Forebygging, fellesskap og forandring: En rapport om utforming og utprøving av et rusmiddelforebyggende program i ungdomsskolen [Prevention, community and change: Report on design and exploration of drug prevention program in junior high schools]. *HBO report 2/1999*. Bodø, Norway: Høgskolen i Bodø.
- Henriksen, O. (2012). “They must be 18 years old—really”: Alcohol debut discourses at parent meetings within alcohol prevention programmes in school. *Nordic Studies on Alcohol and Drugs*, 29, 453–466. doi:10.2478/v10199-012-0040-9
- Hox, J. J., Maas, C. J. M., & Brinkhuis, M. J. S. (2010). The effect of estimation method and sample size in multilevel structural equation modeling. *Statistica Neerlandica*, 64(2), 157–170. doi:10.1111/j.1467-9574.2009.00445.x
- Kivimäki, P., Kerkkonen, V., Valtonen, H., Tolmunen, T., Honkalampi, K., Tacke, U., & Laakkonen, E. (2014). Alcohol use among adolescents, aggressive behaviour, and internalizing problems. *Journal of Adolescent Health*, 37(6), 945–951. doi:10.1016/j.adolescence.2014.06.011
- Koning, I. M., Engels, R. C., Verdunmen, J. E., & Vollebergh, W. A. (2010). Alcohol-specific socialization practices and alcohol use in Dutch early adolescents. *Journal of Adolescence*, 33(1), 93–100. doi:10.1016/j.adolescence.2009.05.003
- Koning, I. M., van den Eijnden, R. J., Engels, R. C., Verdunmen, J. E., & Vollebergh, W. A. (2011). Why target early adolescents and parents in alcohol prevention? *The mediating effects of self-control, rules and attitudes about alcohol use*. *Addiction*, 106(3), 538–546. doi:10.1111/j.1360-0443.2010.03198.x
- Koning, I. M., van den Eijnden, R. J., Verdunmen, J. E., Engels, R. C., & Vollebergh, W. A. (2011). Long-term effects of a parent and student intervention on alcohol use in adolescents: A cluster randomized controlled trial. *American Journal of Preventive Medicine*, 40(5), 541–547. doi:10.1016/j.amepre.2010.12.030
- Kosterman, R., Hawkins, J. D., Guo, J., Catalano, R. F., & Abbott, R. D. (2000). The dynamics of alcohol and marijuana initiation: Patterns and predictors of first use in adolescence. *American Journal of Public Health*, 90(3), 360–366.
- Koutakis, N., Stattin, H., & Kerr, M. (2008). Reducing youth alcohol drinking through a parent-targeted intervention: The Orebro Prevention Program. *Addiction*, 103(10), 1629–1637. doi:10.1111/j.1360-0443.2008.02326.x
- Kraus, L. (2016). *ESPAD report 2015. Results from the European school survey project on alcohol and other drugs*. Luxembourg: Publications Office of the European Union. doi:10.2810/86718
- Lavikainen, H., Ahlstrom, S., Metso, L., Nevalainen, J., & Lintonen, T. (2008). Relationship between negative experiences and drinking experience among 15-to 16-year-old adolescents in Finland. *European Addiction Research*, 14(3), 169–178. doi:10.1159/000130421
- Maccoby, E. E. (1992). The role of parents in the socialization of children: An historical overview. *Developmental Psychology*, 28(6), 1006–1017. doi:10.1037//0012-1649.28.6.1006
- Mares, S. H. W., Lichtwarck-Aschoff, A., Burk, W. J., van der Vorst, H., & Engels, R. C. M. E. (2012). Parental alcohol-specific rules and alcohol use from early adolescence to young adulthood. *Journal of Child Psychology and Psychiatry*, 53(7), 798–805. doi:10.1111/j.1469-7610.2012.02533.x
- Masten, A. S., Faden, V. B., Zucker, R. A., & Spear, L. P. (2008). Underage drinking: A developmental framework. *Pediatrics*, 121, S235–S251. doi:10.1542/peds.2007-2243A
- Muthen, B. O., & Satorra, A. (1995). Complex sample data in structural equation modeling. *Sociological Methodology*, 25, 267–316. doi:10.2307/271070
- NOVA. (2015). Ungdata. Nasjonale resultater 2014. *Nova Rapport 7/15*. Oslo, Norway: NOVA.
- Pape, H. (2009). School-based programmes that seem to work. *Nordic Studies on Alcohol and Drugs*, 26(6), 521–535. doi:10.1177/145507250902600606
- Petrie, J., Bunn, F., & Byrne, G. (2007). Parenting programmes for preventing tobacco, alcohol or drugs misuse in children < 18: A systematic

- review. *Health Education Research*, 22(2), 177–191. doi:10.1093/her/cyl061
- Rohrbach, L. A., Grana, R., Sussman, S., & Valente, T. W. (2006). Type II translation: Transporting prevention interventions from research to real-world settings. *Evaluation & the Health Professions*, 29(3), 302–333. doi:10.1177/0163278706290408
- Ryan, S. M., Jorm, A. F., & Lubman, D. I. (2010). Parenting factors associated with reduced adolescent alcohol use: A systematic review of longitudinal studies. *Australian and New Zealand Journal of Psychiatry*, 44(9), 774–783. doi:10.1080/00048674.2010.501759
- Saunders, G. R. B., McGue, M., Iacono, W. G., & Elkins, I. J. (2017). Parent–offspring resemblance for drinking behaviors in a longitudinal twin sample. *Journal of Studies on Alcohol and Drugs*, 78(1), 49–58.
- Shelton, K. K., Frick, P. J., & Wootton, J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology*, 25(3), 317–329. doi:10.1207/s15374424jccp2503_8
- Smit, E., Verdurmen, J., Monshouwer, K., & Smit, F. (2008). Family interventions and their effect on adolescent alcohol use in general populations: A meta-analysis of randomized controlled trials. *Drug and Alcohol Dependence*, 97(3), 195–206. doi:10.1016/j.drugalcdep.2008.03.032
- Soloff, P. H., Lynch, K. G., & Moss, H. B. (2000). Serotonin, impulsivity, and alcohol use disorders in the older adolescent: A psychobiological study. *Alcoholism: Clinical and Experimental Research*, 24(11), 1609–1619. doi:10.1111/j.1530-0277.2000.tb01961.x
- Spoth, R. (2008). Translating family-focused prevention science into effective practice: Toward a translational impact paradigm. *Current Directions in Psychological Science*, 17(6), 415–421. doi:10.1111/j.1467-8721.2008.00617.x
- Spoth, R., Greenberg, M., & Turrise, R. (2008). Preventive interventions addressing underage drinking: State of the evidence and steps toward public health impact. *Pediatrics*, 121, S311–S336. doi:10.1542/peds.2007-2243E
- Steinkjær, B. (2008). *Tiltaket Unge & Rus i Oslo - en prosessevaluering [The Youth & Alcohol intervention in Oslo - a process evaluation]*. Skriftserie fra Nordnorsk Kompetansesenter-Rus. Narvik, Norway: KoRus North.
- Strøm, H. K., Adolfsen, F., Handegard, B. H., Natvig, H., Eisemann, M., Martinussen, M., & Koposov, R. (2015). Preventing alcohol use with a universal school-based intervention: Results from an effectiveness study. *BMC Public Health*, 15. doi:10.1186/s12889-015-1704-7
- Torsheim, T., Sorlie, M. A., Olseth, A., & Bjornebekk, G. (2015). Environmental and temperamental correlates of alcohol user patterns in grade 7 students. *Nordic Studies on Alcohol and Drugs*, 32(6), 605–621. doi:10.1515/nsad-2015-0057
- Van Der Vorst, H., Engels, R. C. M. E., Meeus, W., & Deković, M. (2006). The impact of alcohol-specific rules, parental norms about early drinking and parental alcohol use on adolescents' drinking behavior. *Journal of Child Psychology and Psychiatry*, 47(12), 1299–1306. doi:10.1111/j.1469-7610.2006.01680.x
- Wilhelmsen, B. U., Laberg, J. C., & Klepp, K. I. (1994). Evaluation of 2 student and teacher involved alcohol prevention programs. *Addiction*, 89(9), 1157–1165. doi:10.1111/j.1360-0443.1994.tb02792.x
- Zucker, R. A., Donovan, J. E., Masten, A. S., Mattson, M. E., & Moss, H. B. (2008). Early developmental processes and the continuity of risk for underage drinking and problem drinking. *Pediatrics*, 121, S252–S272. doi:10.1542/peds.2007-2243B