

The bi-directional relationship between parental alcohol-specific socialization practices and
adolescent weekly drinking, and the role of obedience

Roxanne Schaakxs

3364542

Masterthesis Youth Studies

University Utrecht

Supervisor: R. J. J. M. van den Eijnden

Date: June 18th, 2012

Abstract

The current study investigated the interaction between adolescent weekly drinking and parental alcohol-specific socialization practices. Participants were early adolescents (N = 906) and one of their parents. Longitudinal data from multiple informants were used. Results showed that alcohol-specific rules can prevent early adolescents from becoming a weekly drinker. However, frequent alcohol-specific communication encourages adolescents to start drinking. As soon as adolescents consume alcohol on a weekly basis, parents become more lenient. Although alcohol-specific rules decline, parents stay more strict to disobedient adolescents than obedient adolescents. For future campaigns or interventions, it is recommended to keep focusing on alcohol-specific rules. Additionally, the quality and content of alcohol-specific communication might be important, rather than the frequency of these conversations. Further, it would be interesting to incorporate adolescent obedience in future research more often, to explore the role of this adolescent characteristic in more detail. *Key words:* alcohol use, alcohol-specific socialization, early adolescents, obedience, rules, communication

Samenvatting

In dit onderzoek is de interactie tussen wekelijks drinken door adolescenten en alcoholspecifieke socialisatie van ouders onderzocht. De steekproef bestond uit vroege adolescenten (N = 906) en één van hun ouders. Longitudinale data zijn verzameld van zowel adolescenten als ouders. Strengere regels met betrekking tot alcoholgebruik verkleinen de kans dat een adolescent begint met wekelijks drinken. Daarentegen vergroot frequent communiceren over alcoholgebruik de kans om te beginnen met wekelijks drinken. Wanneer adolescenten eenmaal een wekelijkse drinker zijn, worden ouders minder streng. Regels nemen af, maar ouders blijven wel strenger wanneer hun kinderen vaak ongehoorzaam zijn. Voor toekomstige campagnes en interventies wordt aangeraden om de nadruk te leggen op regels ten aanzien van alcoholgebruik. Verder is de kwaliteit en inhoud van communicatie over alcoholgebruik wellicht belangrijker dan de frequentie waarmee er over alcohol wordt gesproken. Tot slot zou het interessant zijn om in de toekomst in meer detail de rol van gehoorzaamheid van adolescenten te bestuderen, in de context van alcoholgebruik onder jongeren en alcoholspecifieke socialisatie van ouders.

Trefwoorden: alcoholgebruik, alcoholspecifieke socialisatie, vroege adolescenten, gehoorzaamheid, regels, communicatie

The bi-directional relationship between parental alcohol-specific socialization practices and adolescent weekly drinking, and the role of obedience

Adolescent alcohol use in The Netherlands

Adolescent drinking is a common phenomenon in The Netherlands. Although consumption of light alcoholic beverages is legal from the age of sixteen, 89% of the Dutch adolescents has some experience with alcohol use at the age of fifteen. In the Netherlands, 24% of the adolescents drink at least ten times a month, whereas the European average is 10% (Van Laar, Monshouwer & Van den Brink, 2010). Adolescent drinking can lead to multiple problems, such as aggression, delinquency and problem drinking (e.g. Verdurmen, Monshouwer, Van Dorsselaer, Ter Bogt, & Vollebergh, 2005).

Adolescents in the ages of 12 and 13 most often drink at home with their parents. Therefore, parents play a substantial role in the development of adolescent drinking. One particular aspect of the parental role in the development of adolescent drinking is alcohol-specific socialization. This is the way in which parents are actively concerned with adolescent drinking by creating alcohol-specific rules, conveying disapproval of adolescent alcohol use or communicating about alcohol use (Van der Vorst, Engels, Meeus, & Dekovic, 2006). In the current study, two types of alcohol-specific socialization will be investigated with regard to adolescent weekly drinking, namely alcohol-specific rules and frequency of alcohol-specific communication. More specifically, the bi-directional relationship between weekly drinking and the aforementioned socialization practices will be examined.

Adolescence is a period during which children strive for autonomy and become more independent from their parents. Adolescents experience a growing need to resist to parental authority (Baumrind, 1978). It is possible that the effect of parenting practices is not as strong as it is during childhood, especially when adolescents make the decision to be disobedient. Although research has shown that rebellious adolescents have a bigger chance to start drinking (Brook, Whiteman, Gordon, Nomura, & Brook, 1985), to my knowledge, no studies have been carried out regarding adolescent obedience in combination with alcohol-specific socialization practices and adolescent alcohol use. In order to learn more about the role of obedience in the context of alcohol use and alcohol-specific socialization practices, it was decided to include adolescent obedience in the current study as well.

Alcohol-specific rule-setting

Alcohol-specific rule-setting is the extent to which parents allow their children to drink alcohol (e.g. at home, at a party) (Van der Vorst, Engels, Meeus, Deković, & Van Leeuwe, 2005). Previous cross-sectional studies found a strong negative relationship between strict alcohol-specific rules and adolescents' alcohol use (Koning, Engels, Verdurmen, & Vollebergh, 2010; Van der Vorst, Engels, Dekovic, Meeus & Van Leeuwe, 2006; Yu, 2003). Longitudinal studies also found a positive relationship between permissiveness of adolescent drinking and actual adolescent alcohol intake (Jackson, Henriksen, & Dickinson, 1999; Wood, Read, Mitchell, & Brand, 2005), implicating the same relationship. Apparently, adolescents respect their parents' opinions and act in accordance to the rules that are set. Therefore, it is expected that alcohol-specific rules will predict adolescent drinking on a later occasion. More specifically, it is expected that non-drinking adolescents whose parents set stricter rules at baseline, will have a smaller chance to become a weekly drinker one year later (*hypothesis 1*). Further, although not studied before, it seems plausible that adolescents who generally obey their parents might follow the rules that are being set and might value the messages their parents try to get across more than disobedient adolescents. Therefore, adolescent obedience can be expected to moderate the relationship between alcohol-specific rules and weekly drinking. It is hypothesized that the expected preventive effect of alcohol-specific rules on the onset of alcohol use will be stronger for obedient adolescents compared to disobedient adolescents (*hypothesis 2*).

However, as previous cross-sectional and longitudinal studies showed, as soon as adolescents start drinking, parents become less strict and more lenient towards alcohol use (Mares, Lichtwarck-Aschoff, Burk, Van der Vorst & Engels, 2012; Van den Eijnden, Vermulst, Vet, & Van de Mheen, 2011; Van der Vorst, Engels, Deković, Meeus, & Vermulst, 2007). Only when adolescent drinking seems to escalate, parents seem to become more strict again (Van den Eijnden et al., 2011). Therefore, it is expected that there is a negative longitudinal relationship between weekly drinking and alcohol-specific rules. In other words, it is expected that adolescents who drink at baseline, have to deal with less alcohol-specific rules one year later than adolescents who do not drink at baseline (*hypothesis 3*). Parents of disobedient children might feel incompetent about parenting and might feel unable to prevent their children from risky behavior. Parents who worry often, have been found to set less strict alcohol-specific rules (Koning, Van den Eijnden, Glatz, Verdurmen, Engels, & Vollebergh, submitted for publication). Therefore, it is expected that parents of obedient adolescents will set stricter rules compared to parents of disobedient adolescents (*hypothesis 4*).

Alcohol-specific communication

Alcohol-specific communication occurs when a parent discusses alcohol use directly with an adolescent (Ennett, Bauman, Foshee, Pemberton, & Hicks, 2001). By doing so, the parent conveys his or her point of view to the adolescent and informs the adolescent about alcohol use (e.g. 'there are negative consequences to underage alcohol use'). It seems plausible that more frequent communication about adolescent alcohol use prevents adolescents from actual drinking (Rueter, Conger, & Ramisetty-Mikler, 1999). However, both cross-sectionally (Van den Eijnden et al., 2011) and longitudinally (Van der Vorst, Burk, & Engels, 2010), a positive relationship between alcohol-specific communication and adolescent drinking was found, indicating that more alcohol-specific communication actually leads to more adolescent alcohol use. Longitudinally, this only applied to male, moderate to heavy drinkers (Van der Vorst et al., 2010). One possible explanation for this finding lies in adolescents' curiosity for activities that they are not allowed to participate in, the so-called 'forbidden fruit hypothesis'. The more they are told not to drink alcohol, the more they want to try drinking (Spijkerman, Van den Eijnden, & Huiberts, 2008; Van der Vorst et al., 2005). Moreover, when parents bring up the topic of alcohol use too often, this could lead to adolescents having more positive mental associations with alcohol use. This could also be an explanation for the positive relationship between frequency of alcohol-specific communication and adolescent alcohol use. Additionally, the messages parents convey might not always be constructive (Van den Eijnden et al., 2011). Given these findings, it is expected that adolescents who experience more frequent communication about alcohol use at baseline, will have a bigger chance of being a weekly drinker one year later (*hypothesis 5*). Also, it is expected that the possible encouraging effect of frequent alcohol-specific communication will be stronger for disobedient adolescents, in comparison to obedient adolescents (*hypothesis 6*), because they might feel the need to do the opposite of what their parents are telling them to do.

Although only found for male, moderate to heavy drinkers, adolescent alcohol use has been associated with a decrease of alcohol-specific communication (Van der Vorst et al., 2010). In the current study, it is therefore hypothesized that adolescents who drink at baseline, experience less frequent alcohol-specific communication one year later than adolescents who do not drink at baseline (*hypothesis 7*). Subsequently, it is expected that parents of obedient adolescents will communicate more frequent compared to parents of disobedient adolescents (*hypothesis 8*), again due to the possible feeling of incompetence by parents of disobedient adolescents.

The present study

To summarize, the current study's aim is to investigate the potential bi-directional relationship between two alcohol-specific socialization practices, namely alcohol-specific rules and frequency of alcohol-specific communication, and weekly adolescent drinking. The current study differentiates adolescent reports from parental reports with the exception of obedience, which was not measured for adolescents. By doing so, reliability of the data will increase. Because the current study uses two data waves, the causal direction of the effects can be studied. It provides me with the opportunity to study whether alcohol-specific rules and alcohol-specific communication predict the onset of alcohol use, or whether parents adjust their rules and frequency of communication according to their children's levels of alcohol use (Van der Vorst et al., 2007). The current study is of theoretical relevance, because it is one of the first studies to put adolescent obedience into the perspective of adolescent drinking and alcohol-specific socialization practices. Further, results from this study can provide helpful information for future interventions and contribute to targeting the right audience with the right message to reduce or prevent adolescent alcohol use.

Method

Sample and design

The sample used in this study consists of the control group of the 'Prevention of Alcohol Use in Students' intervention, the original study being a randomized controlled trial using blocked randomization stratified by education level (Koning, Vollebergh, Smit, Verdurmen, van den Eijnden, ter Bogt, et al., 2009). For the first part of this study, regarding the relationship between alcohol-specific socialization practices and onset of weekly drinking, only adolescents that did not drink at baseline were included. For the second part of this study, regarding the effect of weekly drinking on rule-setting and the frequency of alcohol-specific communication, both drinking and non-drinking adolescents at baseline were included. The sample is a convenience sample and the total control group at baseline consisted of 906 adolescents (of which 52.5% boys). Adolescents were obtained from 4 schools. At all schools, less than 25% of the students came from a migrant population. There is no claim for the results to be representative for all Dutch adolescents. At baseline, all adolescents were in their first year of high school, equivalent to the first year of middle school in the United States. Adolescents were mainly enrolled in a low level of education (60.2%). At baseline, 17.0% drank on a weekly basis, whereas 72.5% did not (10.5% unknown).

Measures

Weekly drinking. In this study, drinking behavior reflected whether or not adolescents were weekly drinkers. Adolescents were classified as a weekly drinker when they consumed at least one unit of alcohol per week. Whether or not an adolescent met the criteria for being a weekly drinker, was measured according to the steps performed by Koning et al. (2010). Both adolescent and parental reports were used.

Alcohol-specific rules. Alcohol-specific rules reflected the extent to which parents allowed their children to drink alcoholic beverages in different situations, based on both adolescent and parental reports. A pre-existent 10-item scale was used, describing situations like 'I am allowed to drink one alcoholic drink when my father or mother is home' and 'I am allowed to drink alcohol during the weekend' (Van der Vorst et al., 2005). Parents were asked the same questions, but formulated from their perspective (e.g. 'My child is allowed to drink one alcoholic drink when my partner and I are not at home'). Response categories ranged from 1 ('not applicable at all') to 5 ('completely applicable') on a 5-point Likert scale. Items were recoded so a higher score indicated stricter rules about adolescents' alcohol use. This scale showed good reliability in previous studies (Cronbach's $\alpha = .80$, Koning et al., 2010; Cronbach's $\alpha = .91$ and $\alpha = .92$, Van der Vorst et al., 2005). In the current study, the scale showed a good reliability as well (Cronbach's $\alpha = .89$, adolescents T₀; Cronbach's $\alpha = .83$, parents T₀).

Alcohol-specific communication. Alcohol-specific communication was defined as the frequency to which parents talked to their children about different aspects of alcohol use. Adolescent as well as parental reports were used. A 6-item scale was used, inspired by Ennett et al. (2001). The scale was translated into Dutch and only six of the original eight items were included. Topics that were covered were negative consequences of alcohol use, rules about alcohol use, punishment for using alcohol, telling the adolescent not to drink, portrayal of alcohol by media, and peer pressure. Adolescents were asked how often parents talk to them about these topics. Parents were asked how often they talk to their children about the same topics. Response categories ranged from 1 ('never') to 5 ('very often') on a 5-point Likert scale. This scale showed good internal consistency in previous studies as well (Cronbach's $\alpha = .84$ to $.88$, Mares, Van der Vorst, Engels, & Lichtwarck-Aschoff, 2011; Cronbach's $\alpha = .90$ and $\alpha = .92$, Van der Vorst et al., 2005). In the current study, the scale showed good reliability (Cronbach's $\alpha = .88$, adolescents T₀; Cronbach's $\alpha = .88$, parents T₀)

Obedience. Obedience was the extent to which adolescents obeyed when their parents prohibited them from doing something, based on only parental reports since no questions

regarding obedience existed in the adolescent questionnaire. First, parents were asked 'What does your child usually do when you tell him/her to stop doing something you don't approve of?'. Five response categories were given, ranging from 1 ('Stops immediately') to 5 ('Does not do what you tell him/her to do'). Items were recoded, so a higher score means higher obedience. Second, parents were asked 'If you prohibit your child from doing something, is he/she often disobedient?' Five response categories were given, ranging from 1 ('No, usually not') to 5 ('Very often'). Again, items were recoded, so a higher score means higher obedience. Third, parents were asked 'What happens when you tell your child he/she cannot go out that night, but he/she already promised her friend(s) to come along?'. Four response categories were given, ranging from 1 ('He/she does not listen and still goes') to 4 ('He/she obeys and stays at home'). Finally, parents were asked 'How does your child usually react when you want him/her to do something at home?'. Response categories ranged from 1 ('He/she refuses') to 3 ('He/she helps immediately'). A mean score was created using the four questions. This mean score was used as a continuous variable in the analyses. In the current study, the scale showed poor reliability (Cronbach's $\alpha = .45$).

Procedure

80 schools were selected randomly from the list of all public secondary schools in April 2006. To be invited to participate, schools needed to meet three criteria: a) at least 100 first-year students, b) less than 25% students from migrant populations and c) not offering special education. Adolescents as well as parents completed the questionnaires. Adolescents completed online questionnaires on a secured website in classrooms, supervised by trained research assistants. Parents were asked to complete the questionnaires at home and were given a letter of consent, providing them the option to refuse participation of their child. A written reminder was sent three weeks later and after another two weeks, non-responding parents were contacted by telephone. Data at T_0 for both parents and adolescents were gathered in September/October 2006. Data at T_1 were gathered 10 months later, in June/July 2007. The original study was approved by the Medical Ethical Committee. Schools in the control condition were not allowed to start alcohol-related interventions during the study period. However, business-as-usual was allowed because some education about alcohol use is part of the Dutch curriculum (Koning et al., 2009).

Strategy of Analyses

Descriptive statistics will be given for both weekly and non-weekly drinking adolescents, according to parental as well as adolescent reports. Chi squared goodness-of-fit tests will be performed to investigate whether or not these groups differ in terms of gender and education level. Spearman and Pearson correlations will be provided for all variables used to answer the research questions, again for both informants.

A multiple logistic regression analysis will be performed in order to test hypotheses 1, 2, 5 and 6. Logistic regression is obligatory as the dependent variable is dichotomous (onset of weekly drinking versus no onset of weekly drinking). In this analysis, the possible confounding effects of gender and education level will be investigated. Further, it will be tested whether or not alcohol-specific rules, frequency of alcohol-specific communication and obedience predict the onset of alcohol use. Ultimately, by adding terms of interaction for obedience, it can be investigated whether or not the effects of the predictors are moderated by obedience.

Next, two linear regression analyses will be performed to be able to test hypotheses 3, 4, 7 and 8. One analysis will include alcohol-specific rules as the dependent variable, the other will include alcohol-specific communication as dependent variable. Again, possible confounding effects of gender and education level will be investigated. Weekly drinking and obedience will be added as predictors. Ultimately, the possible moderating effect of obedience can be tested by again adding terms of interaction for obedience. All analyses will be performed using PASW Statistics 18, with an alpha of 5%. Assumptions will be checked before running the analyses. Missing values will be handled by using pairwise deletion. Due to these missing values, sample size varies between analyses.

Results

Descriptive statistics and correlations

Descriptive statistics for weekly drinking at T₀ and T₁ are provided in Table 1 for both adolescent and parental reports. As can be seen, according to both informants, the number of weekly drinking adolescents increased from the moment of the first measurement to the moment of the second measurement one year later. According to parents there are less weekly drinking adolescents compared to adolescent self-reports. Weekly drinking adolescents, compared to non-weekly drinking adolescents, are more often boys, $\chi^2(1) = 4.02, p < .05$ (T₀) and $\chi^2(1) = 7.54, p < .01$ (T₁), and are more often enrolled in the lower education level, $\chi^2(1) = 24.50, p < .001$ (T₀) and $\chi^2(1) = 25.55, p < .001$ (T₁). However, this was only found for

adolescent reports. Additionally, weekly drinkers experience less alcohol-specific rules, $t(173.74) = 11.52, p < .001$ (T_0 adolescents), $t(230.86) = 11.66, p < .001$ (T_1 adolescents), $t(22.53) = 6.03, p < .001$ (T_0 parents) and $t(49.18) = 9.07, p < .001$ (T_1 parents) and are perceived as less obedient by parents than non-weekly drinkers, $t(701) = 2.23, p = .03$ (T_0) and $t(614) = 2.18, p = .03$ (T_1).

In Table 2, Spearman and Pearson correlations are given for drinking behavior, alcohol-specific socialization practices and obedience. These correlations indicate the presence of a negative relationship between weekly drinking and alcohol-specific rules, as well as a negative relationship between weekly drinking and obedience. According to adolescent reports there is a negative relationship between weekly drinking and frequency of alcohol-specific communication. For parental reports, no significant relationship was found.

Table 1

Descriptive statistics for the differences between weekly and non-weekly drinkers

| Total N = 906 | Adolescent reports | | | | Parental reports | | | |
|---------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | T ₀ | | T ₁ | | T ₀ | | T ₁ | |
| Weekly drinker | Yes | No | Yes | No | Yes | No | Yes | No |
| % | 19.0 | 81.0 | 25.8 | 74.2 | 3.3 | 96.7 | 7.6 | 92.4 |
| <i>Alcohol-specific socialization</i> | | | | | | | | |
| Rules, <i>M</i> (SD) | 3.95 (0.76) ^a | 4.68 (0.40) ^b | 3.75 (0.99) ^a | 4.61 (0.51) ^b | 4.31 (0.45) ^a | 4.87 (0.27) ^b | 4.37 (0.39) ^a | 4.89 (0.25) ^b |
| Frequency, <i>M</i> (SD) | 1.96 (0.79) ^a | 2.27 (0.98) ^b | 2.19 (0.93) | 2.31 (0.93) | 2.64 (0.81) | 2.49 (0.81) | 2.80 (0.76) | 2.57 (0.80) |
| <i>Adolescent characteristics</i> | | | | | | | | |
| Obedience, <i>M</i> (SD) | | | | | 3.20 (0.51) ^a | 3.40 (0.44) ^b | 3.23 (0.50) ^a | 3.38 (0.44) ^b |
| <i>Gender</i> | | | | | | | | |
| Boys (%) | 21.7 ^a | 78.3 | 30.0 ^a | 70.0 | 4.3 | 95.7 | 9.6 | 90.4 |
| Girls (%) | 16.2 ^b | 83.8 | 21.3 ^b | 78.7 | 2.1 | 97.9 | 5.5 | 94.5 |
| <i>Level of education</i> | | | | | | | | |
| Low (%) | 24.8 ^a | 75.2 | 32.7 ^a | 67.3 | 3.7 | 96.3 | 9.4 | 90.6 |
| Higher (%) | 10.9 ^b | 89.1 | 16.3 ^b | 83.7 | 2.7 | 97.3 | 5.5 | 94.5 |

Note: Subgroups with different subscripts differ from each other. Rules, frequency and obedience are scored from 0 (lowest) to 5 (highest).

Table 2

Spearman (ρ) and Pearson (r) correlations for both adolescent and parental reports

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------------------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|-------------------|--------------------|
| 1. Weekly drinking T ₀ | - | .44 ^{***} | -.30 ^{***} | -.25 ^{***} | .04 | .01 | -.08 [*] | -.03 |
| 2. Weekly drinking T ₁ | .49 ^{***} | - | -.31 ^{***} | -.45 ^{***} | .04 | .08 | -.03 | -.08 [*] |
| 3. Rules T ₀ | -.46 ^{***} | -.34 ^{***} | - | .61 ^{***} | .06 | .05 | .08 [*] | .06 |
| 4. Rules T ₁ | -.33 ^{***} | -.47 ^{***} | .55 ^{***} | - | .01 | .04 | .03 | .04 |
| 5. Frequency T ₀ | -.12 ^{**} | -.07 ^{**} | .25 ^{***} | .22 ^{***} | - | .65 ^{***} | -.01 | .00 |
| 6. Frequency T ₁ | -.07 | -.06 | .11 ^{**} | .12 ^{***} | .43 ^{***} | - | -.05 | -.01 |
| 7. Obedience T ₀ | - | - | - | - | - | - | - | .47 ^{***} |
| 8. Obedience T ₁ | - | - | - | - | - | - | - | - |

Note: correlations above the median are the correlations for parental reports. Spearman correlations are provided for correlations that include a categorical variable. * $p < .05$,

** $p < .01$, *** $p < .001$.

Alcohol-specific socialization practices and the onset of alcohol use

The results of the first analysis, in which it was tested whether alcohol-specific rules and the frequency of alcohol-specific communication predicted the onset of alcohol use, are shown in Table 3. Gender was a significant predictor for the onset of adolescent alcohol use according to adolescent reports only. According to these reports, boys had a bigger chance of initiating alcohol use than girls. Level of education turned out to be a significant predictor of alcohol initiation for both adolescent and parental reports. Adolescents enrolled in the lower education level had a greater chance to start drinking alcohol than adolescents of higher school levels.

Second, the initial variables of interest were looked into, namely alcohol-specific rules and frequency of alcohol-specific communication for adolescent reports and alcohol-specific rules, frequency of alcohol-specific communication and obedience for parental reports. A significant negative longitudinal relationship was found between alcohol-specific rules and the onset of weekly drinking on T₁ for both adolescent and parental reports. This finding indicated that, as was expected, the more alcohol-specific rules were set by parents, the smaller the chance that adolescents started drinking. Subsequently, also in compliance with the expectation, a significant positive longitudinal relationship was found between frequency of alcohol-specific communication and the onset of weekly drinking on T₁ for adolescent reports. The more often parents spoke about (different aspects of) alcohol use, as perceived by adolescents, the higher the chance that adolescents started drinking. No longitudinal main effects were found for frequency of alcohol-specific communication and adolescent obedience using parental reports.

No moderation effect was found for obedience. Hence, the expectations that the relationship between rules and the onset of weekly drinking and the relationship between frequency of communication and the onset of weekly drinking would differ for different levels of obedience, were not supported.

Table 3

The longitudinal relationship between alcohol-specific socialization practices and the onset of alcohol use on T₁

| | Adolescents (n = 575) | | | Parents (n = 543) | | |
|---|-----------------------|-----------|----------------|-------------------|------------|----------------|
| | OR | 95% CI | R ² | OR | 95% CI | R ² |
| <i>Step 1</i> | | | .04 | | | .07 |
| Gender [ref = boys] | 0.56* | 0.34-0.92 | | 0.47 | 0.21-1.07 | |
| Education level [ref = higher] | 1.94* | 1.17-3.20 | | 4.23** | 1.58-11.33 | |
| <i>Step 2</i> | | | .08 | | | .15 |
| Rules T ₀ | 0.36** | 0.19-0.66 | | 0.15*** | 0.06-0.39 | |
| Frequency T ₀ | 1.29* | 1.01-1.65 | | 1.02 | 0.61-1.68 | |
| Obedience T ₀ | | | | 1.06 | 0.46-2.48 | |
| <i>Step 3</i> | | | | | | .15 |
| Rules T ₀ × Obedience T ₀ | | | | 0.61 | 0.11-3.36 | |
| Frequency T ₀ × Obedience T ₀ | | | | 0.89 | 0.33-2.38 | |

Note: OR = odds ratios. 95% CI = 95% confidence interval. R² = Nagelkerke R².

* p < .05, ** p < .01, *** p < .001.

Weekly drinking and alcohol-specific rules

Next, to be able to examine the bi-directional relationship between alcohol-specific socialization practices and alcohol use, it was examined whether or not weekly drinking at baseline affected alcohol-specific rules and the frequency of alcohol-specific communication one year later. First, the effect of weekly drinking on alcohol-specific rules was looked into (see Table 4). Again, possible confounding effects of gender and level of education were examined. Level of education, using adolescent reports, predicted alcohol-specific rules significantly. Adolescents enrolled in the higher education level encountered more alcohol-specific rules than adolescents of lower school levels, according to themselves. No effect was found for gender.

Regarding the variables of main interest, weekly drinking was a significant predictor of alcohol-specific rules for adolescents reports. Weekly drinking adolescents at baseline experienced less alcohol-specific rules one year later than non-weekly drinkers. This finding supported the expectation that parents became more lenient once adolescents started drinking - according to adolescents' point of view. No significant effects were found for weekly drinking and obedience using parental reports.

For parents, the interaction term of weekly drinking and obedience was significant, meaning that the effect of weekly drinking on alcohol-specific rules was different between obedient and disobedient adolescents. As can be seen in Figure 1, parents believed to be equally strict, regardless of the perceived obedience of their non-weekly drinking children. Amongst weekly drinkers, however, differences showed between obedient and disobedient adolescents. Parents who perceived weekly drinking adolescents as obedient, set more lenient rules than parents who perceived their weekly drinking children as disobedient. This is contrary to what was expected, since it was expected that parents of obedient adolescents would set more strict rules.

Table 4

The longitudinal relationship between weekly drinking and alcohol-specific rules on T₁

| | Adolescents (n = 778) | | | Parents (n = 573) | | |
|---|-----------------------|-----------|-----------------------|-------------------|-----------|-----------------------|
| | <i>Beta</i> | <i>SE</i> | <i>R</i> ² | <i>Beta</i> | <i>SE</i> | <i>R</i> ² |
| <i>Step 1</i> | | | .32 | | | .37 |
| Gender [ref = girls] | -.03 | .05 | | -.02 | .02 | |
| Education level [ref = lower] | .09** | .05 | | .003 | .02 | |
| Rules T ₀ | .54*** | .04 | | .61*** | .03 | |
| <i>Step 2</i> | | | .33 | | | .38 |
| Weekly drinking T ₀ | -.12** | .07 | | -.05 | .06 | |
| Obedience T ₀ | | | | -.03 | .02 | |
| <i>Step 3</i> | | | | | | .39 |
| Weekly drinking T ₀ × Obedience T ₀ | | | | -.12** | .11 | |

Note: * p < .05, ** p < .01, *** p < .001, *R*² = .32 for Model 1, $\Delta R^2 = .01$ for Model 2 (adolescents), *R*² = .37 for Model 1, $\Delta R^2 = .003$ for Model 2, $\Delta R^2 = .01$ for Model 3 (parents).

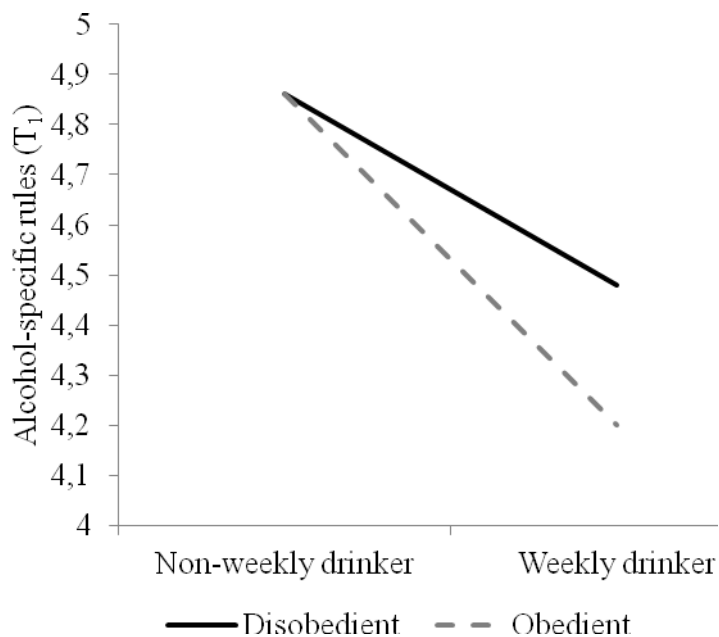


Figure 1. Interaction-effect between weekly drinking and obedience, predicting alcohol-specific rules (T_1)

Weekly drinking and frequency of alcohol-specific communication

The results of the analyses predicting the frequency of alcohol-specific communication are shown in Table 5. With regard to possible confounding variables, only a significant effect was found for gender according to parental reports. Parents, from their own point of view, spoke more often about alcohol with boys than they did with girls.

Weekly drinking predicted the frequency of alcohol-specific communication for neither of the informants. Additionally, no effect was found for obedience. Finally, the interaction term of weekly drinking and obedience was not significant. Hence, no support was found for the initial expectations regarding the longitudinal effect of weekly drinking on frequency of alcohol-specific communication and the possible moderating role of obedience.

Table 5

The longitudinal relationship between weekly drinking and frequency of alcohol-specific communication on T₁

| | Adolescents (n = 778) | | | Parents (n = 570) | | |
|---|-----------------------|-----------|-----------------------|-------------------|-----------|-----------------------|
| | <i>Beta</i> | <i>SE</i> | <i>R</i> ² | <i>Beta</i> | <i>SE</i> | <i>R</i> ² |
| <i>Step 1</i> | | | .18 | | | .42 |
| Gender [ref = girls] | -.03 | .06 | | .08* | .05 | |
| Education level [ref = lower] | .01 | .06 | | -.04 | .05 | |
| Frequency T ₀ | .42*** | .03 | | .63*** | .03 | |
| <i>Step 2</i> | | | .18 | | | .43 |
| Weekly drinking T ₀ | -.004 | .08 | | -.01 | .14 | |
| Obedience T ₀ | | | | -.04 | .06 | |
| <i>Step 3</i> | | | | | | .43 |
| Weekly drinking T ₀ × Obedience T ₀ | | | | -.06 | .29 | |

Note: * p < .05, ** p < .01, *** p < .001, *R*² = .18 for Model 1, $\Delta R^2 < .001$ for Model 2 (adolescents), *R*² = .42 for Model 1, $\Delta R^2 = .002$ for Model 2, $\Delta R^2 = .003$ for Model 3 (parents).

Conclusion & Discussion

The present study showed that alcohol-specific socialization practices can prevent as well as encourage early adolescents' alcohol use, depending on the type of socialization. Strict rule-enforcement showed to have a preventive effect, whereas frequent communication about alcohol-use seems to encourage the initiation of weekly drinking.

The preventive effect of alcohol-specific rules that was found was expected (*hypothesis 1*) and is in line with previous cross-sectional as well as longitudinal findings (Koning et al., 2010; Van der Vorst et al., 2006; Yu, 2003; Jackson et al., 1999; Wood et al., 2005). Adolescents generally find parental authority regarding alcohol use legitimate (Jackson, 2002). Although this does not automatically mean adolescents will actually follow the rules parents set, they in fact do seem to be affected by their parents' opinions concerning alcohol use. They seem to feel the need to act in accordance with the rules that are set. Although it was expected that this effect would be stronger for obedient adolescents compared to disobedient adolescents (*hypothesis 2*), no moderating effect of obedience was found. Mares et al. (2012) argue that the preventive effect of alcohol-specific rules seems to be robust, as previous research showed that alcohol-specific rules were important for adolescents with different socioeconomic backgrounds (Spijkerman et al., 2008), different levels of education

(Van Zundert, Van der Vorst, Vermulst, & Engels, 2006) and even genetically vulnerable adolescents (Van der Zwaluw, Engels, Vermulst, Franke, Buitelaar, Verkes et al., 2010). The current study adds support for this view, adolescent characteristics do not seem to weaken the power of alcohol-specific rules.

Once early adolescents start drinking, alcohol-specific rules become less strict. This result was also in line with expectations (*hypothesis 3*) and consistent with previous findings (Van den Eijnden et al., 2011; Van der Vorst et al., 2007). So, once adolescents start drinking, rules become more lenient. The question then raises if this, in turn, leads to heavier alcohol use. Mares et al. (2012) studied the interaction between adolescent drinking and alcohol-specific rules from adolescence to adulthood. First, this study confirms the finding that the amount of alcohol-specific rules declines after adolescents start drinking. Second, adolescents' alcohol use indeed increased after alcohol-specific rules became less strict. However, even though the amount of rules declined, adolescents whose parents remained to set rules, still drank less alcohol than adolescents of parents who did not set any rules. The current study found that parents set different amounts of rules for obedient and disobedient weekly drinkers. Parents stay more strict to disobedient adolescents. This was against expectations. Although not based on previous research due to the lack of related studies, it was expected that parents would be less strict towards disobedient adolescents, feeling their efforts are not good enough to prevent their children from risky behavior (*hypothesis 4*). The aforementioned study by Mares et al. (2012) did not include any moderators. Providing the moderation effect of obedience in the current study, future studies on adolescent drinking and alcohol-specific socialization practices from childhood to adulthood could include more adolescent characteristics as possible moderators. Given the fact that obedience showed poor reliability in the current study and it was only part of the parental questionnaire, future research should provide a more reliable insight on the interaction between weekly drinking and adolescent obedience, when predicted alcohol-specific rules. This should be done by using a reliable scale measuring obedience among both adolescents and parents. For now, setting stricter rules with regard to disobedient adolescents may be a way for parents to compensate the lack of obedience and could imply that parents make an attempt to keep their disobedient children in control.

In the present study, according to adolescent reports, frequent alcohol-specific communication increased the chance of being a weekly drinker one year later. This was found previously and was as expected (*hypothesis 5*). However, previous research only found support for the 'forbidden fruit hypothesis' in male, moderate to heavy drinkers (Van der Vorst

et al., 2010). The current study found this effect for early adolescents in general, regardless of age and level of education. This finding is contrary to the correlation that was found, given the knowledge that the Spearman correlation between weekly drinking and frequency of alcohol-specific communication was negative. This contrast can be explained in two ways. First, the analysis only included adolescents who were not a weekly drinker at baseline, whereas the correlations table includes all adolescents. Second, frequency of alcohol-specific communication was not the only variable in the analysis. Therefore, the other variables might have suppressed the initial effect of frequency of alcohol-specific communication.

Alcohol-specific communication consists of several constructs, such as frequency, quality, content and strategy (Boone & Lefkowitz, 2007). The current study addressed the frequency of alcohol-specific communication only (how often does it take place). Frequency of communication itself seems to have an adverse effect on adolescent alcohol use. The messages parents convey might not always be constructive (Van den Eijnden et al., 2011). Therefore, the other aspects of alcohol-specific communication should be studied as well.

Obedience does not seem to have a moderating function in the longitudinal relationship between frequency of alcohol-specific socialization and weekly drinking, contrary to what was expected (*hypothesis 6*). Further, alcohol-initiation does not seem to instigate a change in frequency of alcohol-specific communication (*hypothesis 7*). Again, obedience did not moderate the longitudinal relationship between weekly drinking and frequency of alcohol-specific communication (*hypothesis 8*).

Because data from multiple informants were used, adolescent and parental differences in perceived behavior could be explored. In line with previous research, parents seemed to underestimate adolescent drinking (Engels, Van der Vorst, Deković & Meeus, 2007), whereas they reported stricter rules and more frequent communication than adolescents experienced (Van der Vorst et al., 2007).

The current study knows several strengths, such as the longitudinal design and the use of data from multiple informants. However, several limitations of this study should be taken into account as well. First of all, data were gathered at schools. Therefore, it is likely that adolescents' drinking behavior was affected by their peers' drinking behavior. Multilevel analyses would have suited the sample better. For now, one should note that besides alcohol-specific socialization practices, peers' drinking behavior might have contributed to adolescents' alcohol initiation as well. Second, only schools with a migrant population of less than 25% were included in this study, the so-called 'white schools'. This implicates that the results cannot be generalized to the whole Dutch high school population (e.g. 46% of the

Dutch high schools in the four biggest cities has a migrant population of more than 50% in 2008) (CBS, 2009). Third, in line with this limitation of the sample, most of the adolescents attended lower education (60.2%). Fourth, as mentioned earlier, the obedience scale showed poor reliability. Consequently, results regarding the role of adolescent obedience should be interpreted carefully. This scale was used for the first time, since few previous studies were performed regarding adolescent obedience. Therefore, it is suggested to look into the measurement of obedience more precisely in future research and to create a reliable obedience scale.

Taking everything together, this study provides some insights for future practice focusing on prevention and reduction of adolescent drinking. First, frequency of alcohol-specific communication seems to have an adverse effect on adolescent drinking. Therefore, campaigns and interventions, targeted on parents, should not only focus on communicating with early adolescents. Instead, they should emphasize the quality and content of alcohol-specific communication, simultaneously warning parents for the possible negative effects of very frequent (discomforting) communication. Second, because of the strong preventive effect of alcohol-specific rules, the importance of setting strict alcohol-specific rules should be stressed in future campaigns and interventions as well. With this knowledge, further escalation of adolescent alcohol use can hopefully be minimized.

References

- Boone, T.L., & Lefkowitz, E.S. (2007). Mother–adolescent health communication: Are all conversations created equally? *Journal of Youth and Adolescence*, *36*, 1038–1047.
- Brook, J. S., Whiteman, M., Gordon, A. S. et al. (1985). Onset of adolescent drinking: A longitudinal study of intrapersonal and interpersonal antecedents. *Advances in Alcohol and Substance Abuse*, *5*, 91-110.
- Baumrind, D. (1978). Parental disciplinary patterns and social competence in children. *Youth and Society*, *9*, 239-275.
- Centraal Bureau voor de Statistiek (CBS). (2009). *Jaarboek onderwijs in cijfers*. Den Haag: Centraal Bureau voor de Statistiek.
- Engels, R. C. M. E., Van der Vorst, H., Deković, M., & Meeus, W. (2007). Correspondence in collateral and self-reports on alcohol consumption: A within family analysis. *Addictive Behaviors*, *32*, 1016-1030.
- Ennett, S. T., Bauman, K. E., Foshee, V. A., Pemberton, M., & Hicks, K. A. (2001). Parent–child communication about adolescent tobacco and alcohol use: what do parents say and does it affect youth behavior? *Journal of Marriage and Family*, *63*, 48–62.
- Jackson, C. (2002). Perceived legitimacy of parental authority and tobacco and alcohol use during early adolescence. *Journal of Adolescent Health*, *31*, 425-432.
- Jackson C., Henriksen L., & Dickinson D. (1999). Alcohol-specific socialization, parenting behaviors and alcohol use by children. *Journal of Studies on Alcohol*, *60*, 362–367.
- Koning, I. M., Vollebergh, W. A. M., Smit, F., Verdurmen, J. E. E., van den Eijnden, R. J. J. M., ter Bogt, T. F. M. et al. (2009). Preventing heavy alcohol use in adolescents (PAS): Cluster randomized trial of a parent and student intervention offered separately and simultaneously. *Addiction*, *104*, 1669-1678.
- Koning, I. M., Engels, R. C. M. E., Verdurmen, J. E. E., & Vollebergh, W. A. M. (2010). Alcohol-specific socialization practices and alcohol use in Dutch early adolescents. *Journal of Adolescence*, *33*, 93-100.
- Koning, I. M., Van den Eijnden, R. J., Glatz, T., Verdurmen, J. E., Engels, R. C., & Vollebergh, W. A. (Submitted for publication). Don't worry! Parental worries, alcohol-specific parenting and adolescents' drinking.
- Mares, S. H. W., Van der Vorst, H., Engels, R. C. M. E., & Lichtwarck-Aschoff, A. (2011). Parental alcohol use, alcohol-related problems, and alcohol-specific attitudes, alcohol-specific communication, and adolescent excessive alcohol use and alcohol-related problems: An indirect path model. *Addictive Behaviors*, *36*, 209-216.

- 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.
- Rueter, M.A., Conger, R.D., & Ramisetty-Mikler, S. (1999). Assessing the benefits of a parenting skills training program: a theoretical approach to predicting direct and moderating effects. *Family Relations*, *48*, 67–77.
- Spijkerman, R., Van den Eijnden, R. J. J. M., & Huiberts, A. (2008). Socioeconomic differences in alcohol-specific parenting practices and adolescents' drinking patterns. *European Addiction Research*, *14*, 26-37.
- Van den Eijnden, R.J.J.M., Vermulst, A.A., Vet, R., & Van de Mheen, D. (2011). The bidirectional relationship between alcohol-specific parenting practices and adolescent alcohol use and alcohol-related problems. *Journal of Studies on Alcohol and Drugs*, *72*, 408-417.
- Van Laar, M., Monshouwer, K., & Van den Brink, W. (2010). Roken, drinken en blowen door de Nederlandse jeugd. *Kind en Adolescent*, *31*, 204-220.
- Van der Vorst, H., Engels, R. C. M. E., Meeus, W., Deković, & Van Leeuwe, J. (2005). The role of alcohol-specific socialization in adolescents' drinking behaviour. *Addiction*, *100*, 1464-1476.
- 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*, 1299-1306.
- Van der Vorst, H., Engels, R. C. M. E., Deković, M., Meeus, W., & Vermulst, A. A. (2007). Alcohol-specific rules, personality and adolescents' alcohol use: a longitudinal person–environment study. *Addiction*, *102*, 1064-1075.
- Van der Vorst, H., Burk, W. J., & Engels, R. C. M. E. (2010). The role of parental alcohol-specific communication in early adolescents' alcohol use. *Drug and Alcohol Dependence*, *111*, 183-190.
- Van der Zwaluw, C. S., Engels, R. C. M. E., Vermulst, A. A., Franke, B., Buitelaar, J., Verkes, R. J. et al. (2010). Interaction between dopamine D2 receptor genotype and parental rule-setting in adolescent alcohol use: Evidence for a gene-parenting interaction. *Molecular Psychiatry*, *15*, 727–735.
- Van Zundert, R. M. P., Van der Vorst, H., Vermulst, A. A., & Engels, R. C. M. E. (2006). Pathways to alcohol use among Dutch students in regular education and education for

- adolescents with behavioral problems: The role of parental alcohol use, general parenting practices, and alcohol-specific parenting practices. *Journal of Family Psychology, 20*, 456–467.
- Verdurmen, J., Monshouwer, K., Van Dorsselaer, S., Ter Bogt, T., & Vollebergh, W. (2005). Alcohol use and mental health in adolescence: Interactions with age and gender— Findings from the Dutch 2001 Health Behaviour in School-Aged Children Survey. *Journal of Studies on Alcohol, 66*, 605-609.
- Wood, M. D., Read, J. P., Mitchell, R. E., & Brand, N. H. (2004). Do parents still matter? Parent and peer influences on alcohol involvement among recent high school graduates. *Psychology of Addictive Behaviors, 18*, 19–30.
- Yu, J. (2003). The association between parental alcohol-related behaviors and children's drinking. *Drug and Alcohol Dependence, 69*, 253-262.