

A different view on parenting:

Automatic and explicit parenting cognitions in adolescents' drinking behavior.

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Conflict of interest: none

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ABSTRACT

Aim. The aim of the present study was to document the relationship between automatic and explicit parenting cognitions and alcohol use in adolescents. In addition, we examined whether this relationship was dependent on parental alcohol use.

Method. A convenience sample of 59 parents (57.63% mothers, 59.32% younger than 50 years) with children between 14 and 18 years (58.93% girls) completed the Relational Responding Task (RRT) prior to a paper-and-pencil questionnaire.

Results. The relationship between automatic parenting cognitions as measured by the RRT and the frequency of adolescent alcohol intake among drinkers was significant, $\chi^2(1) = 7.74, p < .01$, even after controlling for the predictive validity of explicit parenting cognitions. The prevalence of alcohol use was related to explicit parenting cognitions ($OR=.223, p<.001$) but not automatic parenting cognitions.

Conclusion. This study is the first to demonstrate that automatic parenting cognitions as measured by the RRT can be used as a predictor of alcohol use in adolescents who have initiated drinking, even after controlling for explicit parenting cognitions. This study provides the starting point of a much broader research program aimed at uncovering the relationship between automatic parenting cognitions and offspring behavior, also beyond the domain of alcohol use.

Keywords: automatic parenting, explicit parenting, alcohol use, adolescence

INTRODUCTION

Positive parenting is the foundation for children's healthy development. It is therefore key to document how parents can reduce the degree to which their children engage in (potentially) harmful behavior. Research has shown that parents can help to prevent the early onset of alcohol consumption in adolescents, for instance by setting strict alcohol-specific rules (Habib et al., 2010; Koning et al., 2012; Van der Vorst et al., 2006). Current research on (alcohol-specific) parenting in adolescence is limited, however, because it focuses exclusively on reflective cognitions and deliberative behaviors in parents, such as explicit attitudes, rule setting, and communication about alcohol assessed by self-report methods. In contrast, automatic parenting (i.e., parenting cognitions or behaviors that occur quickly, unintentionally, or in a way that is difficult control) are typically not examined. For that reason, we set out to examine the degree to which alcohol use in adolescents is related to automatic parenting cognitions concerning alcohol use in adolescents.

Background

The value of explicit alcohol-specific parenting behaviors in predicting alcohol use in adolescents has been well established (Abar & Turrise, 2008; Koning et al., 2010, 2012; Turrise et al., 2013). Until now, however, parenting researchers have relied almost exclusively on direct, self-report measures aimed at capturing parenting practices under optimal conditions, that is, when parents have ample opportunity to deliberate upon their parenting actions. Parenting, however, often takes place under sub-optimal conditions (e.g., time pressure, increased stress levels, fatigue, etc.). Given that it may be difficult to maintain or engage in a deliberative parenting style under suboptimal conditions (De Houwer et al., 2009; Stacy & Wiers, 2006), one may hypothesize that some parenting actions and cognitions are automatic in nature in that they occur in a fast, unintentional way that is difficult to control. Importantly, parents may or may not have introspective knowledge about their automatic

parenting cognitions and actions. Hence, self-report measures might not capture these automatic aspects of parenting. In addition, self-report measures are known to be sensitive to social desirability concerns and recall biases (Greenwald & Banaji, 1995). Therefore, to capture the full spectrum of parenting, indirect measures are needed to measure individual differences in automatic parenting processes (Greenwald & Banaji, 1995).

Research in the field of cognitive psychology has firmly established the importance of automatic processes for the understanding of human behavior. Automatic processes predict unique variation in behavior that is not accounted for by explicit processes (Wiers et al., 2007; Strack & Deutsch, 2004). Moreover, in some cases, the predictive validity of automatic cognitions has been found to exceed that of explicit cognitions (for a review, see Greenwald et al., 2009). To the best of our knowledge, however, only two attempts have been undertaken to investigate the relationship between smoking in adolescents and automatic *parental* cognitions about smoking. Both cross-sectionally (Chassin et al., 2002) and longitudinally (Sherman et al., 2009), parents' implicit cognitions about general smoking related to their offspring's smoking behavior. Sherman et al. (2009) observed that the degree to which mothers had a positive implicit attitude towards smoking was predictive of smoking initiation in their offspring 18 months later, via adolescents' positive implicit attitudes about smoking. These studies underscore the added value of taking into account implicit parental cognitions when trying to predict substance use in adolescents.

It must be pointed out, however, that neither Chassin et al. (2002) or Sherman et al. (2009) focused on the role of automatic *parenting* processes (i.e. implicit cognitions and behaviors related to substance use by one's own children). For two reasons, we expect that such an approach would deepen the understanding of drinking behavior in adolescents. First, while the importance of parents in adolescent development has been well established, the percentage of variance accounted for by parental influence varies and is never 100% and thus,

there may be additional influences the literature has not yet revealed. The study of automatic and explicit parenting processes may provide a more comprehensive insight into the role of parenting across adolescent development. Second, although several interventions targeting parents have proven effective in postponing the onset of drinking (Koning et al., 2009; 2013; Smit et al., 2008), these effects are typically small. Interestingly, most non-existing or small effects are found for universal parent interventions targeting older adolescents (Spoth et al., 2008) or adolescents who have already begun consuming alcohol (Smit et al., 2008). In parent-targeted alcohol interventions, only explicit parenting cognitions and behaviors are targeted, whereas the role of automatic parenting processes may be more pronounced among older and/or drinking adolescents as parents are or feel no longer legitimate to for example explicitly set rules. Taking into account automatic, implicit parenting processes may contribute to our understanding about the role of parents in adolescent behavior and may improve the effectiveness of prevention and intervention strategies targeting adolescents' alcohol use.

The aim of the current study was to examine the relationship between automatic parenting processes and alcohol use in adolescents. More specifically, the following three hypotheses were evaluated. First, we examined whether automatic parenting processes can be used as a valid predictor of alcohol use in adolescents. We expected that higher levels of strict automatic parenting processes would be related to lower levels of alcohol consumption (H1). Second, we tested the whether the relation between automatic parenting processes and adolescents' alcohol use remains significant after inclusion of explicit parenting processes. We hypothesized that the relation between automatic parenting processes and alcohol use in adolescents is significant, over and above the relation with explicit parenting processes (H2). Third, we investigated whether the relation between automatic parenting processes and adolescents' alcohol use is moderated by the degree to which the parents themselves consume

alcohol. Drawing on the findings of Sherman et al. (2009), who showed that positive implicit parental smoking cognitions relate to more parental smoking, it is expected that more strict automatic parenting processes predict lower levels of adolescents' alcohol use particularly when parents' own alcohol use is low (H3).

METHOD

Participants and Procedure

A convenience sample of 59 parents (57.63 % mothers) who were recruited among the personal networks of four research assistants. Their minimum age was 35 years and 59.32 % were younger than 50 years. On average, parents drank 6.17 ($SD=7.42$) glasses of alcohol per week. The age of their children ranged between 14 and 18 years (M age = 15.59 years; 58.93 % girls). Although a convenience sample was used, the included parents had similar demographics and behaviors of other 'random' samples. Participants were tested at home and completed the computer task (Relational Responding Task; RRT) prior to a paper-and-pencil questionnaire. All participants provided informed consent prior to participation.

Three participants did not complete the RRT. Two additional participants were excluded because their error rates in the RRT were exceptionally high (i.e., 45.57 % and 46.84 %). In line with earlier work by the second, fifth, and last author, the cutoff criterion used to exclude participants was 2.5 standard deviations above the grand mean ($M = 6.16$ %, $SD = 8.94$ %; threshold = 28.51 %). There were no outliers in terms of the mean (individual) response latencies. The analyses reported below are thus based on a final sample of 54 participants. It may be noted that none of the reported findings were contingent upon the inclusion or exclusion of these outlying values.

Ethical approval by the Utrecht University ethics committee was obtained for a similar, yet more extended study on automatic and explicit parenting cognitions.

Measures

Relational Responding Task (RRT). In a typical RRT, participants are presented with a range of statements that are to be judged as true or false by pressing one of two key on a computer keyboard. In a first test phase, participants are asked to act “as if” they agree with certain statements. In a second test phase, they are asked to act “as if” they disagree with those statements. Task performance in the RRT is a function of the degree to which the (instructed) response rules coincide with a respondent’s implicit beliefs. Accordingly, by comparing task performance across critical test phases, one can obtain an index of a respondent’s implicit beliefs.

For the current study, the RRT consisted of eleven blocks, each consisting of 20 trials. During the first block, participants were presented with 10 statements that were objectively true (5 items, e.g., ‘I am completing a computer task’) or false (5 items, e.g., ‘I am in a shop’). Each of these statements (hereafter referred to as *inducer statements*) was presented twice in a random order in an orange font. During the second block, participants were presented with 10 statements concerning adolescent alcohol use, half of which reflected a strict attitude (e.g., ‘If my child drinks alcohol, I get angry’) while the remaining statements reflected a tolerant attitude (e.g., ‘My child is allowed to drink alcohol’). Each of these statements (hereafter referred to as *target statements*) was presented twice in a random order in a blue font. Participants were instructed to respond as quickly as possible to these statements in a manner that would reflect a strict attitude (i.e., to judge strict statements as ‘true’ and tolerant statements as ‘not true’). During the third, fourth, fifth, and sixth block, all the statements were presented exactly once, either in orange (i.e., inducer statements) or in blue (i.e. target statements). Participants were asked to judge the objective truth value of the inducer statements and to respond to the target statements as if they endorsed a strict parenting style. During the seventh block, each of the target statements was again presented twice in a blue font. Participants were now asked to respond to these statements in a manner that would be

consistent with a tolerant attitude towards adolescent alcohol use (i.e., to judge strict statements as ‘not true’ and tolerant statements as ‘true’). Finally, during each of the last four block, all statements were again presented once, either in orange (i.e., inducer statements) or in blue (i.e. target statements). Participants were asked to judge the objective truth value of the inducer statements and to respond to the target statements as if they endorsed a liberal parenting style.

During the administration of the RRT, the response labels ‘TRUE’ and ‘NOT TRUE’ were presented at the top right and top left corner of the computer screen, respectively. All statements were presented in the middle of the computer screen until a response was registered. Incorrect responses resulted in the presentation of a red cross in the lower half of the computer screen until participants gave the appropriate response. The subsequent trial then started after an interval of 750 ms.

The RRT data were scored using the D1 algorithm, after exclusion of all data stemming from practice trials and induction trials (see De Houwer et al., 2015). Response latencies exceeding the cutoff value of 10,000 ms were thus excluded (i.e., 32 trials in total, 0.71 %). None of the participants responded faster than 300 ms on more than 10 % of the trials. RRT scores were computed so that higher scores reflected more strict automatic parenting cognitions. The split-half reliability of the RRT scores, using Spearman-Brown correction, was $R_{sb} = .74$. This observation exceeds the split-half reliability estimate reported by the original authors of the RRT (i.e., $R_{sb} = .64$; see De Houwer et al., 2015).

Questionnaires. To obtain a measure of *explicit parenting behavior*, parents were first asked to indicate, on a 5-point scale (1 = *not at all acceptable*; 5 = *very acceptable*) and for each of eight different situations (e.g., ‘during family dinner’, ‘at a party with friends’), whether they thought it would be acceptable for a 14/15-year old adolescent to consume alcohol. In addition, they were asked to indicate, for each of 11 different situations, the

likelihood of them approving alcohol consumption by their own child, again using a 5-point scale (1 = *certainly not*; 5 = *definitely*). Cronbach's alpha for these 19 items was .90. All responses were reversed so that higher scores reflected more strict explicit parenting cognitions. For each individual participant, a single index of explicit parenting cognitions was computed by summing the responses across items. Theoretically, scores thus ranged between 19 and 95.

To capture *adolescent alcohol use*, parents were asked to respond to a single question (i.e., 'How often does your child drink alcohol these days?'), again using a 6-point rating scale (0 = *never*; 5 = *a couple of times each week*).

To capture *parental alcohol use*, parents were asked to report (a) the typical number of week days on which they consumed alcohol, (b) the typical number of alcoholic drinks consumed during a week day, (c) the typical number of weekend days on which they consumed alcohol, and (c) the typical number of alcoholic drinks consumed during a weekend day. Daily alcohol consumption was multiplied with the number of days on which alcohol was consumed, both for week days and weekend days. Both indices were summed to obtain a single index of parental alcohol use (see Engels & Knibbe, 2000).

RESULTS

Descriptive statistics for all study variables and pairwise correlations can be found in Table 1. Because adolescent alcohol use was measured at the ordinal level (see above), Spearman's rank correlation coefficients were computed for correlations involving this variable. The mean RRT score was (slightly) negative and statistically different from zero. This observation suggests that, on average, parents were more permissive than restrictive concerning adolescent alcohol use at the automatic level. In contrast, the explicit measure of parenting cognitions revealed a strong tendency to adopt a restrictive parenting style. Interestingly both the automatic and the explicit parenting processes correlated negatively

with adolescent alcohol use. In sum, a more restrictive automatic and explicit parenting style was associated with a lower level of adolescent alcohol intake.

It must be noted, however, that the frequency of alcohol intake was simply zero for a large proportion of the adolescents (i.e., 59.26 %). Accordingly, we performed logistic regression analyses to examine whether measures of automatic and explicit parenting processes were indicative of the presence or absence of alcohol use. In a first step, we performed three separate logistic regression analyses to verify whether adolescent alcohol intake (0 vs. 1) was related to the age and gender of the adolescents and the alcohol intake by their parents. While the prevalence of drinking was more or less the same for male and female adolescents, $\chi^2(1) < 1$, both the age of the adolescents, $\chi^2(1) = 36.83, p < .001$, Nagelkerke $R^2 = .67$, and the drinking behavior of their parents, $\chi^2(1) = 3.91, p < .05$, Nagelkerke $R^2 = .09$, proved to be reliable predictors. As one might have predicted, the likelihood of adolescent alcohol intake increased as a function of increasing levels of parental alcohol intake and as a function of increasing age. Next, we performed two separate logistic regression analyses to examine the predictive validity of explicit and automatic parenting cognitions over and above these predictors. In a first step, both the age of the adolescents and the drinking behavior of their parents were entered as predictors of adolescent alcohol use, $\chi^2(2) = 47.47, p < .001$, Nagelkerke $R^2 = .79$. In a second step, either the explicit or the automatic parenting cognitions were entered as predictors. Whereas the increase in predictive accuracy was negligible for automatic parenting cognitions, $\chi^2(1) < 1$, the added value of the explicit parenting cognitions was significant, $\chi^2(1) = 5.74, p < .001$, Nagelkerke $R^2 = .85$, $OR = .228$ (94.4 % correct

classifications).¹ As expected, strict explicit parenting processes were related to lower levels of adolescent drinking.

Importantly, a different pattern emerged if the two measures of parenting cognitions were used in a ordinal regression analysis to predict the frequency of alcohol intake in the subset of adolescents who did consume alcohol (i.e., 40.64 %). Again, a first series of ordinal regression analyses revealed that the age (but not the gender) of the adolescents, $\chi^2(1) = 5.95$, $p < .05$, Nagelkerke $R^2 = .27$, as well as the drinking behavior of their parents adolescents, $\chi^2(1) = 6.20$, $p < .05$, Nagelkerke $R^2 = .28$, were reliable predictors (in the expected direction). We then performed two separate ordinal regression analyses to examine the predictive validity of explicit and automatic parenting cognitions over and above these predictors. For both analyses, both the age of the adolescents and the drinking behavior of their parents were entered as predictors of adolescent alcohol use in a first step, $\chi^2(2) = 9.49$, $p < .01$, Nagelkerke $R^2 = .40$. In a second step, either the explicit or the automatic parenting cognitions were entered as predictors. Whereas the added value of explicit parenting cognitions was now negligible, $\chi^2(1) < 1$, the increase in predictive accuracy was highly reliable for the automatic parenting cognitions, $\chi^2(1) = 7.76$, $p < .01$, Nagelkerke $R^2 = .61$ (77.27 % correct classifications). As expected, strict automatic parenting cognitions were related to lower levels of adolescent drinking. A final (ordinal) regression analysis using only the automatic/explicit parenting cognitions as predictors confirmed that automatic parenting cognitions were predictive of adolescent alcohol consumption over and above the explicit parenting cognitions $\chi^2(1) = 7.74$, $p < .01$, Nagelkerke $R^2 = .38$ (63.63 % correct classifications).

CONCLUSION AND DISCUSSION

¹ For each of these logistic regression analyses, we examined the impact of (potential) influential cases using leverage values, Cook's distances, and DFBETA's. There was no systematic evidence for the presence of influential cases.

The current study is the first to examine the relationship between automatic parenting cognitions and alcohol use in adolescents. The results of the study demonstrate that automatic parenting cognitions toward adolescent alcohol do relate to adolescent alcohol use, even after controlling for the relation of explicit parenting cognitions concerning adolescent alcohol consumption. As hypothesized, strict automatic parenting cognitions were found to be related to lower levels of adolescent drinking, but not to drinking prevalence, irrespective of parents' own drinking behavior.

In line with our expectations, we observed that among drinkers, the RRT scores, representing automatic parenting processes, were associated with the frequency of adolescent drinking behavior over and above explicit measures of parenting. This finding indicates that the RRT captured a substantively different aspect of (alcohol-specific) parenting cognition than classic self-report measures. It is likely that, as has been shown for automatic processes in general (De Houwer et al., 2009; Wiers & Stacy, 2006), these automatic parenting processes determine parenting that automatically occurs in situations where the parent is under time constraint, feels stressed, or is tired. In these situations parents may not be able or motivated to deliberate upon their behavior, therefore allowing for larger impact of automatic parenting processes upon behavior. Thus, this study is the first that distinguished the existence and relevance of automatic parenting processes in relation to adolescents' frequency of drinking.

Interestingly, when looking at drinkers versus non-drinkers, parents' explicit cognitions were more predictive than automatic parenting cognitions. Previous research demonstrated stronger effects of parent-targeted alcohol intervention aimed at postponing the onset of drinking compared to reducing drinking levels among drinkers (Smit et al., 2008). In line with these studies, current results also point at the relevance of explicit parenting for the prevalence of alcohol use and add to previous knowledge by demonstrating the importance of

automatic parenting particularly when adolescents have already initiated drinking. It is likely that for parents of drinking adolescents it is more difficult to effectively deal with the drinking behavior, as opposed to the clear non-drinking rule parents may explicitly adhere to when their offspring have not started drinking. Once adolescents have started drinking, effective parenting may become more difficult due to the fact that adolescents spend more time without direct parental supervision (Dickson, Laursen, Stattin, Kerr, 2015) and other factors such as the presence of peers and drinking frequency and quantity may become apparent. Though research suggests that parental influence decreases by age (Latendresse et al., 2008) and once adolescents have started drinking (Koning et al., 2010), current results suggest that the influence of parents is not diminishing but is in fact subject to change; explicit parenting behaviors become less and automatic parenting cognitions become more relevant during the course of adolescence and drinking patterns.

Previous studies already showed that parents with strict explicit parental attitudes towards alcohol consumption drink less alcohol themselves (Mares et al., 2011; Van Zundert et al., 2006). Our study extends this line of research by showing that less parental alcohol use also relates to more strict automatic parenting cognitions. However, the relation between automatic parenting cognitions and adolescent alcohol use was not significantly different for low and high levels of parental drinking. Previous research on explicit parental attitudes and behavior also demonstrate that the influence of strict parenting on adolescents' drinking does not depend on the level of parental drinking (Verdurmen, Koning, Van den Eijnden, Vollebergh, & Engels, 2014). It is clinically relevant that we have demonstrated that, even when parents drink (more) alcohol, strict automatic and explicit parenting cognitions are relevant to curb their offspring's drinking. Thus, strict automatic parenting cognitions relate to lower levels of drinking among adolescents, and this is independent of parents' own level of drinking.

We are the first to demonstrate that a measure of automatic parenting processes can be used (i) as an important factor in the alcohol use in drinking adolescents and (ii) to distinguish between automatic and explicit parenting cognitions. This observation may be the starting point of a much broader research program aimed at uncovering the relationship between automatic parenting cognitions and offspring behavior, also beyond the domain of alcohol use. We hasten to acknowledge, however, that our work is subject to a number of important limitations. First, the small sample size of the present study was quite limited. More research using larger samples would thus be needed to substantiate our claims. Second, our measure of alcohol use in adolescents was exclusively based on the judgment of the parents. Given that parents may underestimate the alcohol use of their adolescent children (Engels et al., 2007), it seems key to replicate the present research while using self-reports of drinking behavior. Third, due to the cross-sectional nature of our design, no causal inferences can be made from this study. Accordingly, it seems worthwhile to adopt a longitudinal and/or an experimental approach to further validate the idea that automatic parenting cognitions play a role in adolescent drinking behavior. Last, though the dual process model is an important framework to distinguish between automatic and explicit processes in the first place, the full model was not tested as such. It may be insightful to investigate the role of control in relation to automatic parenting, i.e. individual and contextual (strong and weak situations; Caspi & Moffitt, 1993) control. The current findings have important practical implications. First, for future studies, it would be ideal if parenting researchers combine automatic parenting measures with self-report methods. Second, the current study indicates that there is room for intervention refinement and effectiveness improvement. That is, the role of automatic alcohol-specific parenting should be addressed in parent interventions aimed at changing alcohol use in adolescents. For example, parents can be made aware of the existence of this way of parenting. Research should examine whether targeting this automatic parenting among parents

is an effective mechanism in reducing adolescent drinking aimed by alcohol interventions, as has been demonstrated for explicit parenting practices (e.g. Prevention of Alcohol use in Students, Koning et al., 2009). More importantly, among the full spectrum of drinking parents it is important to address the significance of strict automatic parenting cognitions, next to strict explicit parenting (Vermeulen-Smit et al., 2012).

ACKNOWLEDGEMENTS

This study is supported by the Distinguished Women Scientists Fund 2013.

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Table 1.

Descriptive statistics and pairwise correlations (N = 54).

Variable	<i>M</i>	<i>SD</i>	1.	2.	3.	4.
1. Explicit parenting cognitions	87.24*	8.71	-			
2. Implicit parenting cognitions	-.18*	.48	.11	-		
3. Parental alcohol use	6.17*	7.42	-.14	-.12	-	
4. Adolescent alcohol use	1.09*	1.59	-.60*	-.28*	.15	-

Note. * $p < .05$ (two-tailed).