Reviewer's report

Title: The parent-child relationship and adolescent alcohol use: a systematic review of longitudinal studies

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Reviewer: Ad A Vermulst

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The authors did a great job with this systematic review of longitudinal studies about the relation between parent-child relationship (PCR) and adolescent alcohol drinking. The selection of the studies and the quality assessment of these studies is a very conscientious and time consuming job. I cannot improve this part of the review study and have no comments. The result of this article is clear, there is only weak evidence of PCR on adolescent alcohol use.

It is correct to preclude a meta-analysis because PCR and alcohol drinking were measured with different scales and heterogenic operationalization of alcohol use. The review study is restricted to longitudinal studies "while longitudinal studies can provide more evidence of a causal association because the cause precedes the effect in time". The 28 studies included this review article are summarized in Table 2. The last two columns of this table (analysis and results) need more attention because at a first glance the results in combination with the types of analyses were puzzling. To explain I have numbered the studies from 1 (Adrados, 1995) to 28 (Wu et al., 2006).

Study 1 for example has two waves and in combination with linear regression analysis I understand that one regression coefficient is reported. Study 2 has six waves and in combination with GEE also one regression coefficient is reported. Study 3 has four waves and in combination with HLM one regression coefficient is reported. Study 4 has 7 waves and in combination with latent growth curve modeling the result was ns. Study 7 has four and three waves and accordingly three and two regression coefficients were reported using logistic regression analysis. Why one regression coefficient in studies 2 and 3? And what is the meaning of these coefficients?

These differences in reported results has to do with the way the data were analyzed. 12 studies used a form of regression analysis (linear regression, OLS-regression, logistic, loglog), 8 studies used SEM, 3 used GEE, 3 used HLM (as latent growth curve analysis), 1 used latent class growth analysis (LCGA) and tested differences between three class with ANOVA and 1 used ANOVA.

15 Studies (1,5,7-11,13,14,19,23-27) showed results in accordance with the number of waves. Of these studies, 9 used regression analysis and 6 SEM.

1 Study (16) used GEE but I don't understand the results. "Predicted means at high/medium/low level of maternal warmth for boys: 1.29/ 1.85, p<.05/ 2.41,
p<.05." I guess the high level (1.29) is the reference group?

And: Predicted means at high/medium/low level of maternal warmth for girls: 1.58/1.48, ns/1.38, ns." Is the high level (1.58) the reference group?

12 Studies (2,3,4,6,12,15,17,18,20,21,22,28) showed results that need more explanation.

GEE. 2 Studies (2,12) used GEE. GEE is a repeated measures analysis for all types of dependent variables and this explains why one beta (for father and mother exclusive the interaction effects) or OR (for three levels of attachment) was reported. The waves were used as repeated measures and were combined into one main effect of PCR on the outcome variable.

HLM/LGCA. 3 Studies (3,4,17) used HLM or latent growth curve analysis (LGCA). For these studies HLM is equivalent with LGCA. HLM (LGCA) was used to estimate latent growth curves resulting in intercept (starting level of outcome variable) and slope (increase or decrease of the outcome variable over time) as latent variables. PCR was related to these two variables and not to the original wave scores. In study 4, a non significant result was reported (direct effect of support on alcohol misuse), but in the article of Barnes et al., an indirect effect was also reported via parental monitoring (p.182): "The coefficient from parental support (nurturance) to the alcohol misuse intercept (alcohol initiation) was statistically significant, indicating that the relationship in Figure 2 is truly mediated by monitoring."

SEM. 3 Studies used SEM (6,21,22). For study 6 three waves were claimed but it is unclear how these three waves were used in the structural equation model. Study 21 has three waves but only one regression coefficient was reported. This can be explained by the model they used with PCR measured at T1 and alcohol use at T2. The reported beta of -.22 is significant with p < .01 (and not with p < .05). Study 22 used SEM in the form of a multiple mediation model. It is unclear how the three waves are used in this model. Only one beta is reported (for warmth and for tension), but there are three waves.

Regression. 2 Studies used a form of regression analysis (18,20). Study 18 has three waves but only one beta was reported. I guess that only two waves were used for the analysis. Study 20 has 8 waves and report only one regression coefficient. An explanation is that survival analysis was used.

LCGA with ANOVA. 1 study (15) used both techniques. It is unclear what the value F=2.67, ns means. Looking at the article first a LCGA analysis was done to detect subgroups (early onset, late onset and non users). In a second step differences between the subgroups with respect to PCR was tested with ANOVA.

ANOVA. 1 study used ANOVA (28) but results were reported in % and chi-square. How is this possible? In Table 1 of this article the reported mean for the use-group was 2.4 and for the non-use-group 2.3 (this is a mean score, not a percentage) The same applies for discipline. This was tested with ANOVA, F-values were not reported, but p-values were given (.278 and .155).
My suggestion is to include this information in the text as a kind of additional explanation for Table 2.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.