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The Effect of Marriage on Young Adult Heavy Drinking and its Mediators: Results from Two Methods of Adjusting for Selection into Marriage

Matthew R. Lee, Laurie Chassin, and David MacKinnon

Department of Psychology, Arizona State University

Abstract

This study tested the effect of marriage on young adult heavy drinking and tested whether this effect was mediated by involvement in social activities, religiosity, and self-control reasons for limiting drinking. The sample of 508 young adults was taken from an ongoing longitudinal study of familial alcoholism that over-sampled children of alcoholics (Chassin, Rogosch, & Barrera, 1991). In order to distinguish role socialization effects of marriage from confounding effects of role selection into marriage, analyses used both the analysis of covariance (ANCOVA) method and the change score method of adjusting for pre-marriage levels of heavy drinking and the mediators. Results showed role socialization effects of marriage on post-marriage declines in heavy drinking. This effect was mediated by involvement in social activities such that marriage predicted decreased involvement in social activities, which in turn predicted decreased heavy drinking. There were no statistically significant mediated effects of religiosity. The mediated effect of self-control reasons for limiting drinking was supported by the ANCOVA method only, and further investigation suggested that this result was detected erroneously due to violation of an assumption of the ANCOVA method that is not shared by the change score method. Findings from this study offer an explanation for the maturing out of heavy drinking that takes place for some individuals over the course of young adulthood. Methodologically, results suggest that the ANCOVA method should be employed with caution, and that the change score method is a viable approach to confirming results from the ANCOVA method.

Keywords

marriage; heavy drinking; role socialization; role selection; the analysis of covariance method

Heavy drinking in young adulthood is commonly associated with short-term problems such as injuries and risky sexual behaviors (Jackson, 2008), as well as risk for the development of alcohol use disorders (O'Neill, Parra, & Sher, 2001). However, despite the risk that heavy drinking will persist or escalate over time, research has shown heterogeneity in long-term trajectories such that many individuals “mature out” of heavy drinking over the course of

Correspondence concerning this article should be addressed to Matthew R. Lee, Department of Psychology, Arizona State University, P.O. Box 871104, Tempe, AZ 85287. mlee2@asu.edu.

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young adulthood (e.g., Windle, Mun, & Windle, 2005). Research aimed at explaining this heterogeneity has linked declines in heavy drinking with young adults' developmentally-normative transitions into adult roles such as marriage, parenthood, and employment (e.g., Bachman, Wadsworth, O'Malley, Johnston, & Schulenberg, 1997). The present study extended this research by testing the effect of marriage on heavy drinking using two analytic methods of adjusting for selection into marriage, and by testing mediators of this effect.

Role Selection vs. Role Socialization

In understanding the effect of marriage on heavy drinking, it is important to distinguish between role socialization and role selection (Yamaguchi & Kandel, 1985). Role socialization occurs when a new role (e.g., marriage) fosters changes in behaviors (e.g., drinking) due to incompatibility between the behaviors and the demands of the role (i.e., role incompatibility). In contrast, role selection occurs when pre-existing behaviors or characteristics (e.g., drinking) influence the likelihood that a person will take on a role (e.g., marriage). Because the association between marriage and heavy drinking may reflect either of these processes (or both), it is important to use analytic methods that can show effects of role socialization above and beyond effects of role selection. The present study accomplishes this by testing prospective effects of marriage on heavy drinking while adjusting for pre-marriage levels of heavy drinking. However, different analytic methods can be used to make such adjustments, and each method has unique advantages and limitations that should be considered.

The Analysis of Covariance Method and the Change Score Method

The analysis of covariance (ANCOVA) method and the change score method are two approaches to adjusting for initial levels of the dependent variable (DV). The ANCOVA method involves modeling the effect of the independent variable (IV) on the DV while statistically controlling for initial levels of the DV (e.g., modeling marriage's effect on heavy drinking while controlling for pre-marriage heavy drinking). In contrast, the change score method involves calculating change scores by subtracting initial scores on the DV from later scores on the DV, and then modeling the effect of the IV on these change scores (e.g., modeling marriage's effect on pre- to post-marriage changes in heavy drinking).

One key distinction between these two methods is that only the ANCOVA method assumes that any association between the IV and initial scores on the DV is due to random error and thus will diminish over time through regression to the mean (hereafter, called "the assumption of random initial association"). Because a non-random association between these variables will not diminish over time as expected, this may lead to erroneous detection of an effect of the IV on later scores on the DV. In contrast, the change score method makes no such assumption, but has been otherwise criticized on the grounds that change scores are susceptible to poor reliability under certain circumstances (e.g., Rogosa, 1988). These issues with both methods have been long-recognized in the quantitative methodology literature (e.g., Morgan & Winship, 2007; MacKinnon, 2008) but have received less attention in substance use research. One strategy for addressing these limitations is to employ both analytic methods and to interpret findings with greater confidence when the two methods converge upon a common result.

Studies using the ANCOVA method to test prospective effects of young adult marriage on drinking outcomes have shown marriage to predict declines in heavy drinking, drinking consequences, and alcohol use disorders (e.g., Bogart, Collins, Ellickson, Martino, & Klein, 2005; Gotham, Sher, & Wood, 2003; Power, Rodgers & Hope, 1999). However, given the possibility that role selection caused non-random associations between marriage and pre-

marriage drinking, these effects may have been spuriously detected due to violations of the ANCOVA method's assumption of random initial association. Only one study has tested these effects using the change score method, and this study showed marriage to predict declines in heavy drinking (Bachman et al., 1997). The present study contributed to this literature by using both the ANCOVA and the change score method to test effects of marriage on heavy drinking.

Mediators of the Effect of Marriage on Heavy Drinking

Little attention has been paid to potential mediators of effects of role transitions on young adult drinking. Although a number of mediational hypotheses have been proposed to explain effects of marriage on maturing out, only one study (Bachman et al., 2002) has prospectively tested mediators of effects of marriage on young adult drinking. One hypothesized mediator is change in social context such as declines in unstructured activities and deviant peer involvement (Osgood, Wilson, O'Malley, Bachman, & Johnston, 1996), which Bachman et al. supported by showing that fewer “evenings out for fun and recreation” mediated marriage's effect on heavy drinking. Another hypothesized mediator is conformity to societal expectations (Giordano, Cernkovich, & Rudolph, 2002), which Bachman et al. supported by showing a mediated effect of religiosity. Finally, Bachman et al. supported the mediating role of drinking-related attitudes by showing a mediated effect of increased “disapproval of others' heavy drinking”.

Although Bachman et al.'s (2002) study made an important contribution, they used only the ANCOVA method to test mediation. Thus, given the possibility that role selection caused non-random associations between marriage and pre-marriage levels of their mediators, their mediated effects may have been spuriously detected due to violations of the ANCOVA method's assumption of random initial association. To address this possibility, the present study used both the ANCOVA and the change score method to test three mediators of the effect of marriage on heavy drinking. Mediators included *involvement in social activities* and *religiosity* in order to replicate and extend Bachman et al.'s findings with similar mediators. We also tested *self-control reasons for limiting drinking* as a mediator because incompatibility between heavy drinking and the responsibilities of marriage may create self-control reasons for limiting drinking, which in turn may decrease heavy drinking.

Method

Participants

Participants were from an ongoing longitudinal study of familial alcoholism (e.g., Chassin, Rogosch & Barrera, 1991). At Wave 1, the total sample ($N=454$; $M_{\text{age}} = 12.7$; $SD_{\text{age}} = 1.45$) consisted of 246 children of alcoholics (COAs) and 208 demographically matched non-COA controls. Data were collected annually for Waves 1 through 3, and then at five-year intervals for Waves 4 and 5. Retention was excellent, with rates of 90% and 91% at Waves 4 and 5, respectively. Retention was unbiased by gender or ethnicity. More COAs than non-COAs were lost at Wave 4 ($\chi^2 = 5.43$, $df = 1$, $p < .05$) and Wave 5 ($\chi^2 = 4.65$, $df = 1$, $p < .05$), although these effects were small (Cramer's $V = .11$ and $.10$, respectively; Cohen, 1988). At Waves 4 and 5, full-biological siblings were included if they were within the same age range as the original adolescents. This increased the sample size to 817 across Waves 4 and 5, with 734 at Wave 4 and 762 at Wave 5.

The current sample included all original adolescents and full-biological siblings who either had never been married by Wave 5 or had never been married by Wave 4 and then became married by Wave 5 ($N=508$).¹ Their mean age was 20.59 ($SD=2.06$) at Wave 4 and 25.94 ($SD=2.25$) at Wave 5. Also, 49.80% were COAs, 55.31% were male, 72.31% were non-

Hispanic Caucasian, 24.90% were Hispanic, and 36.18% had at least one parent who graduated college.

Procedure

Recruitment—For details of sample recruitment, see Chassin, Barrera, Bech and Kossak-Fuller (1992). COA families were recruited using court records of DUI arrests, health-maintenance organization wellness questionnaires, and community telephone screenings. A computerized structured interview was used to confirm parental lifetime alcohol abuse or dependence. Reverse directories were used to identify potential non-COA families in the same neighborhoods, and telephone screening was used to match non-COA families to COA families on ethnicity, family structure, adolescent's age, and socioeconomic status. For non-COA families, structured interviews were used to confirm that neither parents met criteria for lifetime alcohol abuse or dependence.

Interviewing—At each wave, interviews were typically held at the family's residence and family members were interviewed simultaneously and in separate rooms to increase privacy. Confidentiality was reinforced with a Department of Health and Human Services Certificate of Confidentiality. Interviews lasted 1-3 hours, and participants were paid up to \$70 for each interview.

Measures

Marriage—The current sample was dichotomized into a “never married” group who reported being unmarried at both Wave 4 and Wave 5 ($n=303$) and a “became married” group who reported being unmarried at Wave 4 and married at Wave 5 ($n=169$).² Others were excluded except for 36 additional participants who were missing Wave 4 or Wave 5 data on marital status but were classified as never married based on marital history data at Wave 6 (a five-year follow-up to Wave 5).

Heavy Drinking—Participants were asked how often they had 5 or more drinks at once in the past year with response options ranging from (1) *never* to (8) *every day*.

Involvement in Social Activities—Participants were asked how involved they were in their social life in the past year with response options ranging from (1) *very involved* to (5) *not at all involved*.

Religiosity—Participants were asked how important religion was in their day-to-day life with response options ranging from (1) *unimportant* to (4) *extremely important*.

Self-Control Reasons for Limiting Drinking—Three items from the Reasons for Limiting Drinking Scale (Greenfield, Guydish, & Temple, 1989) were used to represent desire to maintain self-control. Participants rated each item as a reason for limiting their drinking with response options ranging from (1) *fairly important* to (4) *not at all important*. Items were “Because I like to feel in control of myself”, “Because I don't want to get drunk”,

¹Among excluded participants ($n = 309$), patterns of marital status from Wave 4 to Wave 5 included married to married ($n = 103$), unmarried to engaged ($n = 24$), married to unmarried ($n = 25$), missing to unmarried ($n = 23$), missing to married ($n = 40$), unmarried to missing ($n = 46$), married to missing ($n = 12$), unmarried to unmarried but married before Wave 4 ($n = 6$), unmarried to unmarried but married between Waves 4 and 5 ($n = 22$), and unmarried to married but also married before Wave 4 ($n = 8$). Based on t -tests, excluded participants were significantly older, less involved with social activities, and more religious than non-excluded participants (all significant at $p < .01$ for both waves).

²Analyses were also carried out with the dichotomous marriage variable defined as those who became married (i.e., were unmarried at Wave 4 and then became married at Wave 5) versus all others in the sample, and results from this strategy did not substantively differ from those presented here.

and “Because drinking heavily is a sign of personal weakness”. Coefficient alpha was .62 at both waves.

Parental Alcoholism—Lifetime alcohol abuse or dependence diagnoses were obtained from both parents at Wave 1 with a computerized structured interview (Diagnostic Interview Schedule, version III; Robins, Helzer, Croughan, & Ratcliff, 1981) using Diagnostic and Statistical Manual of Mental Disorders criteria (3rd Ed.; American Psychiatric Association, 1980). For non-interviewed parents, alcoholism diagnoses were established using Family History Research Diagnostic Criteria (Endicott, Anderson, & Spitzer, 1975) on the basis of spousal reports. Participants who were classified as COAs had at least one biological, custodial parent who was alcoholic at Wave 1, and participants who were classified as non-COAs had no biological or custodial parents who were alcoholic at Wave 1.

Analyses

Mplus (Muthén & Muthén, 1998-2007) was used to estimate path models that simultaneously tested (1) marriage's effect on a given mediator, (2) the mediator's effect on heavy drinking, (3) marriage's indirect effect on heavy drinking through the mediator (i.e., the mediated effect), (4) marriage's direct effect on heavy drinking (i.e., marriage's unique effect independent of the mediator), and (5) marriage's total effect on heavy drinking (i.e., the indirect and direct effects combined). Six path models were tested, given that each of the three mediators was tested using both the ANCOVA and the change score method. Significance of mediated effects was tested using Prodcin (MacKinnon, 2008).

ANCOVA models tested effects of marriage on both the Wave 5 mediator and Wave 5 heavy drinking, and tested the effect of the Wave 5 mediator on Wave 5 heavy drinking. These models also included Wave 4 levels of the mediator and Wave 4 levels of heavy drinking as covariate predictors of these same variables at Wave 5. In contrast, change score models tested effects of marriage on changes in both the mediator and heavy drinking from Wave 4 to Wave 5, and tested the effect of changes in the mediator on changes in heavy drinking from Wave 4 to Wave 5. Finally, both ANCOVA and change score models included parental alcoholism, gender, and Wave 5 age as additional covariates. In all models, exogenous predictors were freed to inter-correlate³, and full information maximum likelihood estimation was used to include participants with incomplete data.⁴ Given that some participants were nested within families, family-level clustering of data was modeled (Muthén & Muthén, 1998-2007).

Results

Effects of Marriage on Heavy Drinking

Significant direct and total effects of marriage on heavy drinking were consistently shown for both analytic methods (see Table 1). Means depicted in the top-left panel of Figure 1 show that heavy drinking increased for those who never married but decreased for those who became married.

³Note that fit indices cannot be computed because these models are fully saturated (i.e., $df = 0$).

⁴Missing data were minimal for most variables (ranging from 0.0% to 4.1%) with the exception of religiosity and self-control reasons for limiting drinking (ranging from 8.9% to 17.7%) because these variables were assessed through a supplementary mail-out survey. Multiple-group sensitivity analyses confirmed that data were missing at random for these two variables by showing invariance in model parameters between those with missing data and those with complete data.

Mediators of the Effect of Marriage on Heavy Drinking

Involvement in social activities—The mediated effect of marriage on heavy drinking through involvement in social activities was significant for the ANCOVA method and marginally significant ($p < .10$) for the change score method (see Table 1). Specifically, marriage predicted decreased involvement in social activities, which in turn predicted decreased heavy drinking. Means depicted in the top-right panel of Figure 1 show that involvement in social activities decreased for those who never married but decreased more for those who became married.

Religiosity—Neither analytic method showed a significant mediated effect of marriage on heavy drinking through religiosity (see Table 1). Further, neither method showed a significant effect of religiosity on heavy drinking, although the ANCOVA method alone showed a significant effect of marriage on religiosity. Means depicted in the bottom-left panel of Figure 1 show little effect of marriage on changes in religiosity (i.e., the two groups' lines are close to parallel), and instead show significant pre-marriage differences (at Wave 4) that persist following marriage (at Wave 5). This supports results from the change score method and suggests that the ANCOVA method erroneously detected marriage's effect on religiosity due to violation of this method's assumption of random initial association.

Self-control reasons for limiting drinking—Only the ANCOVA method showed a significant mediated effect of marriage on heavy drinking through self-control reasons for limiting drinking (see Table 1). Although both methods showed a significant effect of self-control reasons for limiting drinking on heavy drinking, only the ANCOVA method showed a significant effect of marriage on self-control reasons for limiting drinking. As with religiosity, means in the bottom-right panel of Figure 1 show little effect of marriage on changes in self-control reasons for limiting drinking and instead show significant pre-marriage differences that persist following marriage. This supports results from the change score method and suggests that the ANCOVA method erroneously detected marriage's effect on self-control reasons for limiting drinking due to violation of this method's assumption of random initial association.

Discussion

The Role Socialization Effect of Marriage on Heavy Drinking

Findings showed role socialization such that heavy drinking increased for those who never married but decreased for those who became married, and this finding extended previous research by showing an effect of marriage on heavy drinking with both the ANCOVA and the change score method. This finding helps to explain heterogeneity in age-related patterns of heavy drinking by linking maturing out of heavy drinking to the adoption of adult roles. Further, this finding is consistent with role socialization theory, which suggests that, when role demands are incompatible with problem behaviors, individuals must either reduce their problem behaviors or leave the role (Yamaguchi & Kandel, 1985). Moreover, by showing effects of young adult role transitions, our findings suggest that developmental trajectories of problem behaviors are not fully predetermined by the influences of earlier risk factors (Schulenberg, Maggs, & O'Malley, 2003). Of course, it is likely that other developmentally-proximal influences also contribute to young adult maturing out of heavy drinking such as changes in personality (Littlefield, Sher, & Wood, 2009) and the development of cognitive control systems in the young adult brain (Steinberg, 2007). Thus, role transitions occur within the context of other developmental changes, so future research should test models of the interplay among these influences.

Mediators of the Effect of Marriage on Heavy Drinking

Involvement in social activities—Findings supported the mediating role of involvement in social activities such that marriage predicted decreased involvement in social activities, which in turn predicted decreased heavy drinking. This replicated Bachman et al.'s (2002) findings and extended them by showing a similar mediated effect with both the ANCOVA and the change score method (albeit with a marginally significant effect for the latter). Further, this finding supports the hypothesis that marriage decreases problem behaviors through changes in social context such as declines in unstructured activities and deviant peer involvement (Osgood et al., 1996).

Religiosity—In contrast, neither analytic method showed a significant mediated effect of religiosity, thus failing to replicate Bachman et al. (2002) and failing to support the hypothesized mediating role of increasing conformity to societal expectations (Giordano, Cernkovich, & Rudolph, 2002). One potential explanation for this divergence is that the present study used only self-reported religious importance, whereas Bachman et al. used a composite of both self-reported religious importance and attendance at religious services. Another potential explanation is that, as was the case in the present study, Bachman et al.'s use of the ANCOVA method may have led to the erroneous detection of this mediated effect due to violation of this method's assumption of random initial association.

Self-control reasons for limiting drinking—Only the ANCOVA method showed a significant mediated effect of self-control reasons for limiting drinking, and our data suggest that the ANCOVA method erroneously detected this mediated effect due to violation of this method's assumption of random initial association. Thus, findings did not support self-control reasons for limiting drinking as a specific mechanism of role incompatibility between heavy drinking and the responsibilities of marriage.

Evidence of Erroneous Results from the ANCOVA Method

The current results suggest that the ANCOVA method erroneously detected effects of marriage on both religiosity and self-control reasons for limiting drinking. Both results from the change score method and the means depicted in Figure 1 showed no effects of marriage on changes in these variables. Further, Figure 1 showed significant pre-marriage differences on these variables (i.e., selection effects), which suggest violations of the ANCOVA method's assumption of random initial association. Therefore, the ANCOVA method likely detected effects of marriage on these variables erroneously because initial associations between the IV and initial scores on the DVs were non-random and thus did not diminish over time as expected. These findings suggest that the ANCOVA method should be used with caution and that the change score method is a viable approach to confirming results from the ANCOVA method. Of course, the change score method should also be used with caution due to the susceptibility of change scores to poor reliability (Rogosa, 1988). See Morgan and Winship (2007) for a more detailed discussion of these two analytic methods.

Limitations and Conclusions

Several limitations of the present study should be considered. First, although analyses adjusted for pre-marriage levels of outcome variables, there may be other important sources of role selection that were not considered. Thus, future research should aim to more comprehensively rule out potential confounding effects of role selection (e.g., see Shadish, Cook, & Campbell, 2002). Second, given the use of only two waves of measurement⁵, temporal precedence was only established for effects of marriage on the mediators and heavy drinking, leaving uncertainty regarding the directionality of the effect of involvement in social activities on heavy drinking. The same limitation applies to the only other study to

show a similar mediated effect (Bachman et al., 2002), so future research should aim to disambiguate the directionality of this association. Finally, both heavy drinking and involvement in social activities were measured with single items, and these items could have captured perceived rather than actual changes following marriage. Thus, future research should utilize multiple-item scales and objective measures (e.g., peer-reports) for stronger measurement of these constructs.

Despite these limitations, the present study contributed to an understanding of young adult maturing out by demonstrating a role socialization effect of marriage on declines in heavy drinking using two different analytic methods, and by showing that this effect was partially mediated by declining involvement in social activities. In addition, results demonstrated an important limitation of the ANCOVA method that can lead to erroneous detection of effects, and suggested that the change score method is a viable approach for ruling out this possibility.

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⁵Wave 6 was not used as a third time point because the five-year lag between Wave 5 and Wave 6 is too long to provide realistic tests of effects of our mediators on heavy drinking. Given MacKinnon's (2008) argument that the timing of assessments should approximately match the timing of the hypothesized mediational process, testing concurrent effects of the mediators on heavy drinking is the most appropriate strategy for our data. Further, the age of participants at Wave 5 ($M_{\text{age}} = 25.95$) is consistent with our focus on maturing out of heavy drinking during young adulthood.

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Figure 1.

Changes in mean levels of heavy drinking and the three mediators from Wave 4 to Wave 5 separately for those who never married and those who became married. Vertical bars show 95% confidence intervals of means. Thus, non-overlapping bars at a given wave of measurement indicate that means differ significantly at $p < .05$. Heavy drinking and the three mediators are coded such that higher scores reflect higher levels of the construct.

Table 1

Path Model Results from Testing Three Mediators of the Effect of Marriage on Heavy Drinking with Two Methods of Adjusting for Initial Levels of Dependent Variables

Model estimates	Results from the ANCOVA method				Results from the change score method			
	Mediators				Mediators			
	Involvement in social activities	Religiosity	Self-control reasons for limiting drinking		Involvement in social activities	Religiosity	Self-control reasons for limiting drinking	
Effects on the W5 Mediator								
W4 heavy drinking	-0.029 (0.049)	-0.030 (0.040)	0.057 (0.051)					
W4 mediator	0.240 (0.050)**	0.619 (0.038)**	0.402 (0.054)**					
Parental alcoholism	0.011 (0.045)	-0.049 (0.040)	-0.034 (0.044)		0.064 (0.047)	-0.030 (0.052)	0.011 (0.049)	
Gender	0.036 (0.045)	-0.045 (0.038)	-0.082 (0.048) [†]		0.001 (0.047)	-0.032 (0.050)	0.047 (0.050)	
W5 age	-0.068 (0.045)	0.006 (0.037)	0.069 (0.040) [†]		-0.008 (0.049)	-0.018 (0.054)	0.125 (0.049)*	
Marriage	-0.126 (0.046)**	0.089 (0.039)*	0.095 (0.046)*		-0.073 (0.045) ^a	0.038 (0.049)	-0.017 (0.051)	
Effects on W5 heavy drinking								
W4 heavy drinking	0.483 (0.045)**	0.451 (0.046)**	0.463 (0.048)**					
Parental alcoholism	0.070 (0.036) [†]	0.061 (0.036) [†]	0.063 (0.035) [†]		-0.029 (0.042)	-0.017 (0.043)	-0.013 (0.041)	
Gender	0.109 (0.036)**	0.110 (0.036)**	0.089 (0.037)*		-0.027 (0.044)	-0.028 (0.044)	-0.015 (0.043)	
W5 age	-0.131 (0.035)**	-0.137 (0.035)**	-0.132 (0.035)**		-0.186 (0.044)**	-0.187 (0.045)**	-0.156 (0.045)**	
W4 mediator	-0.040 (0.038)	-0.095 (0.053) [†]	0.016 (0.045)					
W5 mediator	0.160 (0.042)**	-0.060 (0.055)	-0.225 (0.042)**		0.206 (0.051)**	-0.012 (0.054)	-0.253 (0.042)**	
Marriage	-0.172 (0.031)**	-0.170 (0.032)**	-0.161 (0.032)**		-0.146 (0.038)**	-0.161 (0.037)**	-0.166 (0.035)**	
Mediation estimates								
Total effect	-0.192 (0.031)**	-0.176 (0.031)**	-0.183 (0.032)**		-0.161 (0.037)**	-0.162 (0.037)**	-0.162 (0.037)**	
Mediated effect ^b	-0.020 (0.008)**	-0.005 (0.005)	-0.021 (0.011)*		-0.015 (0.010) [†]	0.000 (0.002)	0.004 (0.013)	
Direct effect	-0.172 (0.031)**	-0.170 (0.032)**	-0.161 (0.032)**		-0.146 (0.038)**	-0.161 (0.037)**	-0.166 (0.035)**	

Note. Standardized estimates are given followed by standard errors in parentheses. For parental alcoholism, 0 = non-COA and 1 = COA. For gender, 0 = female and 1 = male. For marriage, 0 = never married and 1 = became married. All continuous variables are coded such that higher scores reflect higher levels of the construct. W4 = Wave 4 and W5 = Wave 5.

^a For this effect, $p = .106$.

^b Significance levels of mediated effects were tested using Prodcin (MacKinnon, 2008) at $p < .10$, $p < .05$, and $p < .01$.

^c $p < .10$.

* $p < .05$.

** $p < .01$.