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How important are parents during the college years? A longitudinal perspective of *indirect* influences parents yield on their college teens' alcohol use

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Abstract

Building on previous findings supporting the continuing influence of parents on their teens after they have gone to college (Turrisi et al., 2001; 2000), this study examined the possible indirect influence that parents may have on their teen's alcohol use through the selection of alcohol using peers in college. Friend use served as a mediator of the relationship between parenting characteristics and alcohol use in a longitudinal college sample. As part of a larger study, 392 incoming college freshmen were assessed for their perceptions of their parent's parenting practices, and peer alcohol use. Results from SEM indicated that friend alcohol use (first semester freshman year) mediated the relationship between parental knowledge about what their teen was doing in his/her free time (baseline pre-matriculation to college) and individual use in college (second semester freshman year). Findings suggest that even at this late stage of early adulthood parents continue to exhibit influence on the choices their teens make as far as friends, which in turn influences their teens' drinking in college. Implications for prevention are discussed.

Keywords

Parenting characteristics; alcohol use; college

1 Introduction

In response to the breadth of research coupling college alcohol misuse with a range of negative outcomes, both scientists and administrators have increased their efforts in addressing college heavy drinking tendencies (Hingson, Heeren, Winter, & Wechsler, 2005; Hingson & Howland, 2002). Individual factors such as gender, ethnicity, personality, and family history (Baer, 2002; Kahler, Read, Wood, & Palfai, 2003; Weitzman, Nelson, & Wechsler, 2003), alcohol expectancies and motives for drinking (Fromme & D'Amico, 2000; Galen & Rogers, 2004; Jones, Corbin, & Fromme, 2001; Rutledge & Sher, 2001), availability and attractiveness of alternative activities (Turrisi, 1999; Walters & Bennett, 2000), and ecological factors including alcohol availability, price, academic class and exam schedules, and residence (Baer, 2002; DeJong & Langford, 2002) have each been implicated in the etiology of alcohol misuse among college students. However, as the drinking attitudes and the behaviors and influence of peers

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are among the strongest correlates of adolescent alcohol use and abuse (Hawkins, Catalano, & Miller, 1992), much of the present prevention efforts at this level have focused on peer use and influence (Borsari & Carey, 2005; Larimer et al., 2001; Read, Wood, & Capone, 2005; Read, Wood, Davidoff, McLacken, & Campbell, 2002)

Although some literature has suggested the salience of parental influences declines as individuals develop into young adults and move away from their families (Kandel & Andrews, 1987; Windle, 2000; Wood et al., 2001), there is considerable research that suggests parents are quite active in the plans of students as they prepare for college, and they maintain influence after the student has moved to campus across domains such as academic, social, emotional, financial functioning, and health information (ACHA, 2005; Fass & Tubman, 2002; Lehr, Dilorio, Dudley, & Lipana, 2000; Wintre & Yaffe, 2000). For example, Turrisi and colleagues (2001) found that parents educated about binge drinking and how to convey information to their teens just before they embarked on their college education had teens that engaged in significantly lower levels of alcohol use and experienced fewer alcohol related negative consequences. In addition, Wood and colleagues (2000) discovered parental modeling and monitoring were related to lowered use, problems, and moderated peer influences on drinking outcomes. These findings support evidence that parents continue to *directly* influence decision making regarding alcohol use and alcohol related behaviors as students enter college via communication of expectations, setting limits, transmission of values, and the examples parents set regarding alcohol use through modeled behavior. However, there remain aspects of parental influence not yet examined at the college level; the potential *indirect* influence a parent yields on their college teen.

Throughout developmental literature, research has shown that in addition to directly influencing their teens, parents also indirectly influence teen outcomes in a variety of ways (Ary, Duncan, Duncan, & Hops, 1999; Davis-Keen, 2005; George & Kaplan, 1998). For example, Ary and colleagues (1999) found that parental conflict indirectly influences the problem behaviors experienced by adolescents by lowering the quality of parental monitoring, which, in turn, increases the likelihood of association with deviant peers. In addition, research by Davis-Kean (2005) revealed that the socio-economic status of parents and parental education level indirectly influenced the academic achievement of 8–12 year old children through the number of books a child has and his/her enjoyment for reading. Although many studies have associated indirect parental influence to teen outcomes, the notion of indirect parenting influences on college student behavior has yet to be sufficiently explored. Given that research has directly coupled parenting behaviors with college outcomes (Turrisi et al., 2001; Wood et al., 2000), it is likely that parents continue to also indirectly influence their teen's behavior during the college years. This paper sought to examine the possible indirect influences that parents may have on their teen's alcohol use through the selection of alcohol using friends in college, as alcohol using peers is a known risk factor for individual use (Schulenberg, et al., 1999; Windle, 2000). This information would be very informative for alcohol prevention efforts at the college level, considering that peers and parents have both been shown to influence college alcohol use. If, ultimately, parents help impact the peers one selects in college, then collegiate alcohol prevention efforts may be more robust if parents were more involved rather than exclusively focusing on peers.

The present study hypothesized that parental approval of alcohol use, parental monitoring, and parental knowledge of their teens' activities outside the home are each facets of parenting that are associated with college drinking. As college students are often physically distant from their parents, these effects were hypothesized to be indirect, functioning through the alcohol use tendencies of the student's friends. The more parents show approval of the use of alcohol, the more students were expected to associate with friends who regularly consumed alcohol. Additionally, the more parents attempt to know about what their teens are doing at school

during free time, the less a student was expected to associate with other students with high levels of alcohol use. This same relationship was expected to hold for the degree to which parents actually knew what their teen was doing in his/her free time. These hypotheses are supported by previous research that indicates that decreases in parental supervision and monitoring during adolescence have been strongly linked with the adolescent acquisition of substance using peers, and in turn, substance use (Warr, 2005). In addition, research by Brown and colleagues (1993) found that parenting practices, such as monitoring, encouragement of achievement, and joint decision making, significantly influenced adolescent membership in common adolescent crowds (e.g. substance using, non-substance using).

In order to control for prior alcohol use and association with alcohol using peers before college, one's reports of alcohol use during the summer prior to college and the drinking behavior of one's friends in high school were included in the model. If the parental behaviors modeled remain significant in the presence of previous individual and friend use, the conclusions reached would be further legitimized. Lastly, it was hypothesized that, based on previous work, the more a student's friends tended to drink during the first semester (Fall), the more the student was expected to drink during the second semester (Spring) (See Figure 1). In order rule out the possibility that the true mediation of parenting characteristics only functions through the drinking behavior of one's children early in college, one's individual use of alcohol during the first semester was also included in the model.

2 Method

2.1 Sample

Participants consisted of 392 incoming freshman attending colleges in the United States and who resided near a large northeastern university and a large northwestern university just prior to attending college. Students completed measures assessing their perceptions of their parent's knowledge of their lives, monitoring behaviors, and approval of alcohol use prior to the first semester of college. The demographic composition of the sample was as follows: 43% male, 57% female; 90.2% Caucasian, 1.3% Hispanic, .5% African American, 3.3% Asian, and 3% other; 31.1% Catholic, 15.2% Protestant, 4.0% Jewish, 13.6% Church of Latter Day Saints, .5% Muslim, 21.5% other, and 13.6% no religion. The mean age was 17.97 years.

2.2 Participant recruitment and procedure

Study participants were recruited from the cities and surrounding areas near the participating state universities on the east and west coasts of the United States as part of a larger study examining college student drinking. Students' names were randomly selected from all high school yearbooks from public and private schools in the sampling areas. This approach has been used to develop sampling lists in prior research (Turrisi & Jaccard, 1992; Turrisi, Jaccard, Kelly, & O'Malley, 1993). Incoming freshmen were surveyed during the summer prior to enrollment in college, during the fall semester of their first year, and again during the spring semester of their first year.

2.3 Measures

2.3.1 Baseline Pre-matriculation Parent Variables

Parental approval of alcohol use: This measure of parental approval was made up of two variables describing the extent to which an individual feels his/her parents would approve of two specific drinking behaviors, $\alpha = .96$ (for a complete description of the items, see Appendix A). Items were measured on a 3 point scale ranging from "approve" to "disapprove".

Parental monitoring: The factor representing parental monitoring consisted of three items detailing how much effort a student perceives his/her parent taking to monitor his/her behavior, $\alpha = .71$ (see Appendix A). Items were measured on a 3 point scale ranging from “don’t try” to “try a lot.”

Parental knowledge: Parental knowledge was indexed by three manifest items tapping the degree to which an individual perceives his/her parent as actually knowing what he/she is doing when outside of the house, $\alpha = .86$ (see Appendix A). Items were measured on a 3 point scale ranging from “don’t know” to “know a lot.”

2.3.2 First Semester (Fall) Mediating Variable

Friend alcohol use: The measure representing friend alcohol use consisted of 3 items describing an individual’s perception of how many of one’s closest friends engage in risky drinking behaviors, $\alpha = .93$ (see Appendix A). Items were measured on a 5 point scale ranging from “none” to “nearly all.” This same measure was used as a control variable at baseline pre-matriculation, $\alpha = .92$.

2.3.3 Second Semester (Spring) Outcome Variable

Individual alcohol use: This measure of alcohol use was made up of four manifest variables describing weekend drinking. Three items asked participants to provide the number of drinks they would typically consume on a given day of the week (Thursday, Friday, Saturday). For the fourth item, students were asked to state how often he/she had gotten drunk in the past 30 days, $\alpha = .96$. The first 3 items were asked in a free response fashion, while the fourth item was measured on a 6 point scale ranging from never to 9 or more times (see Appendix A). The same measure was used as control variable at baseline pre-matriculation, $\alpha = .82$, and during the second semester in order to illustrate the most appropriate mediational model, $\alpha = .89$.

3 Results

A structural equation model, using AMOS 7.0, was fit to the 23 manifest items and 8 latent factors mentioned above. For item descriptives and correlations, see Table 1. In addition to the hypothesized pathways discussed, residual covariances were included between the items associated with the parental monitoring and parental knowledge factors. These associations represent method factors stemming from the measurements performed, as the covaried items ask about parents’ knowledge and monitoring of the same behaviors/circumstances in the same manner. For example, a residual covariance was modeled between, “How hard do your parents try to know where you are at night?” and “How well do your parents know where you go at night?” In addition, the residuals variances of the items loading on one’s own use during the first semester and one’s own use during the second semester were allowed to covary due to the fact that the items were identical at both time points as was the context in which the behavior occurred (i.e. at college). In addition, covariances between the factor representing baseline alcohol consumption and the factors representing baseline friend use, parental knowledge, and parental approval were estimated, as were the covariances between parental monitoring and parental knowledge, parental approval and baseline friend use, and parental knowledge and baseline friend use. These were included to account for the contemporaneous association between participant’s alcohol use and the behaviors of one’s parents and peers during the summer prior to college. Covariances were also estimated between parental factors representing expected relationships among parenting characteristics. Finally, significant residual direct effects of baseline predictors on an individual’s alcohol use during the second semester of college were included in the model.

The fit of the hypothesized model to the data was acceptable, $\chi^2(198) = 452.77, p < .001$, CFI = .96, RMSEA = .06. Although the chi square statistic was significant, this was most likely due to the moderately large sample used, as the chi square is largely influenced by sample size. This assertion is further supported by the additional indices mentioned that indicate an acceptable fit to the data. Results indicated that all factor loadings modeled were significant, $p's < .001$, as were all modeled covariances, $p's < .01$. While this model fit the data well, an examination of the estimated beta weights revealed an unexpected positive relationship between parental monitoring and friend alcohol use during the first semester of college, $\beta = .34, t = 7.28, p < .01$. This was unexpected as the latent bivariate association between parental monitoring and friend use during the first semester of college was negative and non-significant, $r = -.02$. An exploratory examination of the scatterplots between the items associated with parental monitoring and the items associated with friend use showed each of the associations to be non-linear, with high and low levels of parental monitoring associated with high friend use and average parental monitoring associated with low levels of friend use. In order to account for this quadratic association, the indicators of the parental monitoring were squared, with the latent factor now representing squared parental monitoring.

This new model also fit the data well, $\chi^2(205) = 446.65, p < .001$, CFI = .96, RMSEA = .06 (see Figure 2). Non-significant factor covariances and residual direct effects were deleted from the model in the interest of parsimony. In regard to the hypothesized paths, parental knowledge during the summer predicted friend use during the first semester, such that the more parents knew about what their teen was doing in his/her free time, the less his/her friends tended to use alcohol, $\beta = -.29, t = -1.99, p < .05$. Squared parental monitoring also predicted friend use during the first semester, such that the more parents attempt to know what their children are doing in their free time, the less his/her friends tended to use alcohol, $\beta = -.96, t = -2.37, p < .05$. In addition, the alcohol use of one's friends in high school predicted the alcohol use of one's friends during the Fall semester, $\beta = .91, t = 14.64, p < .001$, such that higher friend use in high school predicted high friend use in college. Parental approval of alcohol use and baseline use were not significantly predictive of friend use.

Parental monitoring at baseline was also predictive of an individual's use of alcohol during the first semester of college, with higher monitoring predicting decreased alcohol consumption, $\beta = -.87, t = -2.07, p < .05$. Friend use and one's own alcohol use at baseline also predicted an individual's use during the first semester of college, such that greater use by one's self and one's friends during high school is associated with greater use in college, $\beta_{\text{friend}} = .38, t = 6.44, p < .001$; $\beta_{\text{own}} = .63, t = 7.74, p < .001$. Parental knowledge and approval were not predictive of one's own drinking during the first semester.

A significant association was also shown between friend alcohol use during the first semester and an individual's use during the second semester, such that the more one's friends tended to use alcohol, the more an individual tended to use alcohol during the second semester of college, $\beta = .14, t = 2.75, p < .01$. There was also significant stability of alcohol use across the first two semesters of college, such that heavy using individuals during the first semester tended to continue to use heavily during the second semester, $\beta = .70, t = 11.78, p < .001$. Finally, there was a significant residual direct effect of parental approval during the summer on an individual's alcohol use during the second semester of college, such that the more disapproving a parent was of alcohol use, the less an individual tended to drink, $\beta = -.68, t = -3.19, p < .01$.

The mediation of parenting practices on alcohol use during the second semester of college through friend use during the first semester was tested using the adjustment to the test distribution of the Sobel test (1982) described by MacKinnon and colleagues (2002). Results indicate that the effects of parental knowledge and parental monitoring on their children's use of alcohol during the second semester of college is significantly mediated by the alcohol use

of their children's friends during the first semester, $Sobel_{\text{knowledge}} = -1.62, p < .01$, $Sobel_{\text{monitoring}} = -1.80, p < .01$.

4 Discussion

The purpose of this study was to explore the indirect influence of particular parenting characteristics on teen alcohol use through the teen choice of alcohol using peers in college. Specifically, friend alcohol use was examined as a mediator of the relationship between parental monitoring, parental knowledge, parental approval of alcohol use, and individual alcohol use in college. Results suggested that parenting behaviors have a direct impact on their teens' selection of friends during college, even after accounting for the influence of one's prior drinking and one's previous friends (high school). It appeared that the more students reported their parents knowing about the ways in which they spent their free time and the more they report their parents try to know about their free time activities, the less an individual tended to associate with heavy drinking peers in college and the less they drank themselves. These results appeared to support the notion that the selection of low alcohol using friends in college may represent teen internalization of parental perceived values. This pathway represents a legitimate mechanism by which parents can and do maintain influence on their teens while they are away at college. The finding that parental monitoring and parental approval also directly affect teen drinking in college also supports the notion of parents influence across the transition to college. Results of this nature are encouraging to both parents and intervention scientists aiming to reduce alcohol misuse at the college level. Specifically, findings suggest that parents and prevention programs should work toward actively increasing parental knowledge and monitoring of teen behaviors, while fostering parental disapproval of alcohol misuse. This study shows that efforts of this kind at the high school level will impact college behaviors.

There are a few limitations to the present study which should be addressed in the future. First, students from this sample lived primarily on campus, away from their parents. It would be interesting to examine potential differences in the effects of these parenting characteristics on a sample of students that are living at home and commuting to campus. Second, the sample was largely homogenous in regard to ethnicity (90% Caucasian). It is important to test these hypotheses among a more diverse and representative sample, as research has shown parenting characteristics to have differential effects across ethnicity (Mason & Buttler, 2004). Third, this study relied exclusively on data from the perspective of the teen. In terms of designing programs to assist parents in the prevention of alcohol misuse in college, student retrospective data does not allow researchers to distinguish between instances where parents are engaging in monitoring behaviors but their teen does not perceive it, and where parents are engaging in monitoring behaviors, and their teens perceive it. The present study only shows us that student perceptions of these behaviors have significant and observable effects. Future work may also benefit from examining the quality of the monitoring behaviors being perceived, in regard to whether the teen understands, appreciates, and internalizes the behaviors or is irritated and views the monitoring as an intrusion in their lives. The quality of monitoring behavior may be crucial for parental behaviors to have a positive influence on teen choices and actions. Future studies should delineate between the different types and quality of monitoring. Further, resulting teen behaviors and the internalization of parent values in college are most likely due to an interaction between parenting and particular characteristics of the teen. An examination of how particular teen characteristics interact with different parenting behaviors would serve as an important addition to the current college literature. Finally, additional longitudinal work needs to be done examining the impact of parenting practices throughout child development. Doing so would help delineate the differential impact of early and later parenting practices.

In conclusion, results from this study are consistent with a growing literature showing that parents are a critical vessel of influence on their teens (Lehr, Dilorio, Dudley, & Lipana,

2000; Turrisi et al., 2001; Wood, Read, Mitchell, & Brand, 2004), even in this relatively late stage of development. Future research should examine other ways in which parents can impact their teens during this important developmental transition.

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Appendix A

Measured Variables and Factor Loadings

Parental Approval of Alcohol Use

A1, How would your parents feel if you drank one or two drinks nearly every day?

(approve, wouldn't care, disapprove), $\lambda_{1,1} = .17^{***}$

A2, How would your parents feel if you had five or more drinks once or twice each weekend?

(approve, wouldn't care, disapprove), $\lambda_{2,1} = 1.00$

Parental Monitoring

B1, How hard do your parents try to know where you go at night?

(don't try, try a little, try a lot), $\lambda_{3,2} = 1.12^{***}$

B2, How hard do your parents try to know what you do with your free time

(don't try, try a little, try a lot), $\lambda_{4,2} = .84^{***}$

B3, How hard do your parents try to know where you are most afternoons after school

(don't try, try a little, try a lot), $\lambda_{5,2} = 1.00$

Parental Knowledge

C1, How well do your parents know where you go at night?

(don't know, know a little, know a lot), $\lambda_{6,3} = .95^{***}$

C2, How well do your parents know what you do with your free time?

(don't know, know a little, know a lot), $\lambda_{7,3} = .99^{***}$

C3, How well do your parents know where you are most afternoons after school?

(don't know, know a little, know a lot), $\lambda_{8,3} = 1.00$

Friend Alcohol Use

D1, F1, How many of your close friends drink alcohol?

(none, some, half, most, nearly all), $\lambda_{9,4} = .99^{***}$, $\lambda_{15,6} = .90^{***}$

D2, F1, How many of your close friends get drunk on a regular basis (at least once a month)?

(none, some, half, most, nearly all), $\lambda_{10,4} = 1.07^{***}$, $\lambda_{16,6} = 1.00$

D3, F1, How many of your close friends drink primarily to get drunk?

(none, some, half, most, nearly all), $\lambda_{11,4} = 1.00$, $\lambda_{17,6} = .93^{***}$

Personal Alcohol Use

E1, G1, H1, Given that it is a typical week, please write the number of drinks you probably would have on a Friday, $\lambda_{12,5} = 1.79^{***}$, $\lambda_{18,7} = 1.97^{***}$, $\lambda_{21,8} = 2.19^{***}$

E2, G2, H2, Given that it is a typical week, please write the number of drinks you probably would have on a Saturday, $\lambda_{13,5} = 1.95^{***}$, $\lambda_{19,7} = 2.00^{***}$, $\lambda_{22,8} = 2.18^{***}$

E3, G3, H3, During the past 30 days (about 1 month), how many times have you gotten drunk, or very high from alcohol? (never, 1 or 2, 3 or 4, 5 or 6, 7 or 8, 9 or more), $\lambda_{14,5} = 1.00$, $\lambda_{20,7} = 1.00$, $\lambda_{23,8} = 1.00$

Figure 1. Hypothesized Structural Equation Model

Figure 2. Final model with beta weights

$\chi^2(205) = 446.65, p < .001$; CFI = .96; RMSEA = .06

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

Note: All factor loadings modeled were significant, $p < .001$ (see Appendix A).

All residual covariances modeled were significant, $p < .05$.

The item residuals associated with parental approval were held equal for identifiability reasons.

Factor covariances between parental approval and baseline use, parental approval and friend

use, squared parental monitoring and parental knowledge, parental knowledge and baseline

use, parental knowledge and friend use, and friend use and baseline use were all significant,

$p < .001$, and were not included in the figure in order to avoid clutter. The covariance between

the residuals of friend use and individual alcohol use at time 2 was also significant, $p < .001$.

All other covariances were fixed to zero.

Table 1

Correlations of Variables Used

	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																			
-.15***	1																		
-.19***	.67***	1																	
-.35***	.63***	.72***	1																
.09	-.25***	-.18***	-.15**	1															
.10	-.22***	-.17**	-.14**	.80***	1														
.08	-.18***	-.12***	-.11*	.74***	.81***	1													
.11*	-.14**	-.20***	-.18**	.41***	.48***	.41***	1												
.14*	-.13**	-.22***	-.23**	.43***	.52***	.47***	.84***	1											
.17**	-.17**	-.19**	-.19***	.51***	.56***	.54***	.74***	.76***	1										
.07	-.20***	-.16**	-.15**	.72***	.61***	.60***	.36***	.38***	.47***	1									
.07	-.19***	-.16**	-.14**	.67***	.66***	.66***	.39***	.44***	.48***	.83***	1								
.05	.20***	-.15**	-.14**	.66***	.68***	.72***	.41***	.46***	.52***	.79***	.84***	1							
.03	-.16**	-.16**	-.15**	.50***	.50***	.49***	.61***	.58***	.58***	.57***	.61***	.56***	1						
-.00	-.20***	-.17*	-.17**	.51***	.52***	.49***	.59***	.59***	.55***	.55***	.58***	.56***	.83***	1					
.03	-.14**	-.11*	-.09	.58***	.58***	.56***	.55***	.53***	.62***	.60***	.63***	.60***	.78***	.77***	1				
.11*	-.16**	-.18**	-.15**	.53***	.53***	.49***	.55***	.58***	.59***	.55***	.58***	.55***	.55***	.74***	.70***	.66***	1		
.07	-.18**	-.21**	-.18**	.52***	.49***	.46***	.54***	.58***	.57***	.53***	.55***	.55***	.53***	.71***	.79***	.68***	.82***	1	
.13*	-.17**	-.19***	-.20**	.58***	.55***	.54***	.54***	.57***	.57***	.61***	.60***	.61***	.61***	.70***	.70***	.74***	.81***	.80***	1
.36	1.52	1.52	1.58	2.21	1.56	1.53	1.03	1.19	1.91	2.36	1.95	1.78	2.05	2.13	2.27	2.28	2.36	2.29	2.29

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5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
(.49)	(.64)	(.61)	(.62)	(1.34)	(1.38)	(1.36)	(2.21)	(2.38)	(1.36)	(1.41)	(1.50)	(1.45)	(2.96)	(3.06)	(1.59)	(3.34)	(3.37)	(1.56)