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The Influence of Economic Pressure on Emerging Adult Binge Drinking: Testing the Family Stress Model over Time

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Abstract

The Family Stress Model proposes that disrupted family processes may help explain the association between economic adversity and poor child developmental outcomes. In this study, the Family Stress Model was tested across adolescence to emerging adulthood. Participants included 451 rural White youth who participated with their parents from age 13–23 (52% female). The data were analyzed at five developmental time periods with separate pathways for mothers and fathers. The findings reveal for both parents that economic pressure at time 1 (age 13) led to parental emotional distress which was related to harsh couple interaction at time 2 (ages 14 and 15). This marital conflict was related to harsh parenting toward the adolescent (time 2), which was then directly associated with higher levels of offspring drinking when youth were in middle adolescence (age 16) at time 3. Alcohol use in middle adolescence was associated with binge drinking in late adolescence (age 18, time 4) into emerging adulthood (age 23, time 5). Drinking behaviors did not differ for boys and girls. The current results show that economic adversity has an effect on family processes which influence offspring binge drinking patterns in later adolescence that continue into emerging adulthood.

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Authors' Contributions

O.N.D. participated in the conceptual design of the study, helped in conducting a full literature review, performed and interpreted statistical analyses, participated in drafting the manuscript, and made revisions based on reviewer comments. T.K.N. assisted in the funding acquisition and the data curation, participated in the design and coordination of the study and helped to draft and revise the manuscript critically for important intellectual content, and made revisions based on reviewer comments. All authors read and approved the final manuscript.

Conflicts of Interest

The author's report no conflicts of interest.

Data Sharing Declaration

This manuscript's data will not be deposited.

Compliance with Ethical Standards

Ethical Approval

This research was approved by the Institutional Review Board at Iowa State University.

Informed Consent

All participants in the current study gave informed consent before taking part in any part of this research.

Keywords

economic pressure; family processes; harsh parenting; binge drinking; adolescence; emerging adulthood

Introduction

Emerging adulthood marks the transitional period from approximately 18–25 years old, in which young people feel they have left adolescence, but not yet attained adult status (Arnett, 2015). Individuals in this stage of life are highly diverse in terms of their educational and occupational combinations and trajectories. In addition, emerging adults have reached sexual and physical maturation, but have not yet set up a stable structure of an adult life. Thus, in this somewhat ambiguous stage, emerging adults face many decisions regarding higher education, work, family, romantic relationships, and where to reside (Arnett, 2015).

Although the freedom of choice in many of these decisions generate positive outcomes, often times stress, worry, and conflict arise that may lead to risky behavior. Moreover, this stress also builds on risky behavior already displayed in adolescence (Elam et al., 2016). For example, predictors such as early life stress, parental behavior, and internalizing/externalizing problems in adolescence have been associated with peak prevalence rates of substance use in this stage of life (Andrews & Westline, 2016). Evidence suggests adolescents may be more inclined toward risky behaviors than younger children or adults (Gardner & Steinberg, 2005), and risky behaviors such as substance use, tend to continue through adolescence into emerging adulthood (Diggs, Neppl, Jeon, & Lohman, 2017). Indeed, youth who drink in adolescence are at greater risk of developing alcohol use disorders in adulthood (Pitkänen, Kokko, Lyyra, & Pulkkinen, 2008).

It is important to understand elements that may influence the decision to engage in underage drinking behaviors. Studies show that stress from economic adversity may influence parents' ability to interact effectively with each other and their adolescent, which may affect the likelihood of youth problem behavior (Hardaway & Cornelius, 2014). The Family Stress Model (Conger & Conger, 2002) proposes that disrupted family processes may help explain the association between economic adversity and poor child developmental outcomes. It indicates that economic pressure (not being able to make ends meet, having to make financial cutbacks, and having unmet material needs) leads to parents' emotional distress which increases couple conflict. High levels of couple conflict predict greater parental hostility towards the child, which leads to poor child developmental outcomes. Empirical support for the Family Stress Model was first demonstrated with cross-sectional data from parents and their offspring, where economic pressure was linked to early adolescent alcohol use and antisocial behavior through parental feelings of depression and hostility and their observed hostile behaviors (Conger et al., 1991).

Despite evidence that economic pressure is associated with family stress processes to predict child outcomes, most studies utilizing the Family Stress Model predict to child or adolescent outcomes (Benner & Kim, 2010; Conger et al., 1991; Neppl, Senia, & Donnellan, 2016; Scaramella, Sohr-Preston, Callahan, & Mirabile, 2008), and have not extended family

processes as experienced in adolescence to behavior in emerging adulthood. In addition, although studies have applied the Family Stress Model to predict substance use in adolescence, most have used cross-sectional data which limits temporal ordering of causal influences (Conger et al., 1991). Moreover, many studies have merged parenting of mothers and fathers (Piko & Balázs, 2012), have solely focused on the mother-child relationship (Guimond et al., 2016), or have not taken parent alcohol use into account (Conger et al., 1991). Finally, it is important to investigate the continuity of alcohol use from adolescence to emerging adulthood (Varlinskaya, Truxell, & Spear, 2014) in rural samples as research indicates that rural youth may be at higher risk for alcohol use disorders than those from urban settings (Gale, Lenardson, Lambert, & Hartley, 2012). The current study utilizes the Family Stress Model framework in a rural sample to examine the effects of economic pressure when offspring were in early adolescence (age 13), on parents' emotional distress, harsh couple interaction, and harsh parenting behavior when youth were in middle adolescence (ages 14, 15), adolescent drinking behavior at age 16, as well as offspring binge drinking during middle adolescence and emerging adulthood (ages 18 and 23). This study also controlled for both parent and adolescent use in early adolescence.

Economic Pressure and Youth Outcomes

According to the Family Stress Model, financial stressors influence parents' emotional distress such as feelings of depression, anxiety, and hostility. Parents' emotional stress is then related to couple conflict such as hostility directed toward the spouse, as well as problems and distress in the marital relationship (Conger, Conger, & Martin, 2010). Conflict between parents is expected to lead to harsh parenting which influences the well-being of the child. The Family Stress Model was first demonstrated when offspring in the present study were in early adolescence (see Conger & Conger, 2002; Conger et al., 2010). Indeed, Conger et al. (1992) tested the Family Stress Model on the adjustment of adolescent boys aged 12–14 years old. They found that financial conditions were related to economic pressure, which was linked to parental depression, resulting in marital conflict and disruptions in effective parenting. This ineffective parenting mediated the association between economic adversity and poor adolescent adjustment. In another study, Conger, Elder, Lorenz, & Simons (1994) found an association between economic hardship on youth problem behavior for both boys and girls in the middle school years.

Other studies have replicated specific pathways of the Family Stress Model (Landers-Potts et al., 2015). For example, Landers-Potts et al. (2015) found that economic stress was associated with economic pressure and symptoms of parental depression, which was associated with caregiver conflict. This conflict was negatively associated with parenting quality, which was linked to adolescent internalizing behavior and lower levels of positive adjustment. Benner and Kim (2010) found that financial status led to increased economic pressure, which was related to parental depression, and linked to greater marital hostility, as well as harsh, coercive parenting. This parenting behavior was directly related to youth delinquency and depressive symptoms. Finally, Gibb, Fergusson, and Horwood (2012) found that economic hardship experienced in childhood was associated with higher rates of criminal offending and mental health problems in adulthood.

Family Processes and Youth Alcohol Use

Family processes such as parental couple interaction and harsh parenting behaviors are linked with higher levels of adolescent alcohol use and alcohol use disorders (Neighbors, Clark, Donovan, & Brody, 2000). For example, higher levels of interparental conflict has been shown to increase the likelihood of youth delinquency and alcohol use (Vanassche, Sodermans, Matthijs, & Swicegood, 2014). Conger and colleagues (1991) found that marital conflict was directly related to adolescent drinking, which may be a coping response to family stress. In terms of parenting, it has been found that harsh parenting practices were linked to alcohol use during adolescence (Kim-Spoon, Farley, Holmes, & Longo, 2014). Moreover, coercive parental control (Aquilino & Supple, 2001) and father harsh parenting (Diggs et al., 2017) in the early adolescent years has been associated with increased substance use in later adolescence and emerging adulthood. Though evidence shows that marital conflict and harsh parenting can elicit adolescent alcohol use (Kim-Spoon et al.; Vanassche et al., 2014), less is known about these family processes as experienced in adolescence on drinking behavior into emerging adulthood. Finally, research indicates that parent educational attainment is negatively related to youth alcohol abuse (Patrick, Wightman, Schoeni, & Schulenberg, 2012), and there is a positive association between parental alcohol use and child use (Vermeulen-Smit et al., 2012).

Stability of Alcohol Use over Time

By the time youth are 16 years old, almost 46% have consumed alcohol in their lifetime (SAMHSA, 2016). This percentage increases to 60% at age 18 and 91% by the time individuals are 23 years old. Though engaging in alcohol use in adolescence and emerging adulthood may be considered experimental or normative (Litt & Stock, 2011), the risks of drinking alcohol and for continued use into emerging adulthood have been well documented (Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2002). Indeed, Patton et al. (2007) found that moderate-risk alcohol use at 14- and 15- years old predicted a significantly increased rate of high-risk drinking in young adulthood.

In addition to use, binge drinking is considered problematic in both adolescence and emerging adulthood, and is defined by SAMHSA as 4 or more drinks on the same occasion for females and 5 or more drinks on the same occasion for males, usually within two hours, on at least one day in the past month (NIAAA, 2018). According to SAMHSA (2016), 41% of males and 37% of females aged 18–25 binge drank in the past month. Research has shown that adolescents who engage in heavy drinking during the high school years will likely continue this drinking behavior into emerging adulthood (Thompson, Stockwell, Leadbeater, & Homel, 2014). Finally, geographic region may influence adolescent drinking rates, such that those from rural areas have a higher prevalence of alcohol related behaviors (Chan et al., 2016). Taken together, results suggest that youth who engage in alcohol use and binge drinking behavior in the early adolescent years, are more likely to continue this pattern of drinking into emerging adulthood. Though the stability of adolescent alcohol use has been well documented, no study to date, has examined pathways of the Family Stress Model during early and middle adolescence on binge drinking behavior in emerging adulthood. Therefore, the present investigation examined economic and family processes consistent with the Family Stress Model that may influence alcohol use and binge drinking for rural

adolescents that continues into emerging adulthood, while controlling for emerging adult educational attainment since college graduates may be more likely to binge drink than those with some college/Associate's degree or less (SAMHSA, 2016).

Gender Differences in Family and Individual Processes

Studies indicate there may be differences in family processes for mothers and fathers as well as sons and daughters. For example, Williams, Cheadle, and Goosby (2015) found that economic pressure triggered by economic hardship was linked to increased levels of couple conflict, even more so in fathers than mothers. Similarly, the impact of financial stress on parenting behaviors was found to be greater for fathers than mothers (Ponnet, 2014). Although sons and daughters may identify more with their same-sex parent (Shulman & Seiffge-Krenke, 2015), Conger and colleagues (1994) examined pathways of the Family Stress Model and found no differences between mothers and fathers, and these processes applied equally to sons and daughters when used to predict adolescent emotional and behavioral problems (Conger et al., 1994).

In terms of alcohol, there is evidence that males have a higher prevalence of current and lifetime use. Males also consume a higher volume of alcohol than their female counterparts (SAMHSA, 2016). Schulte, Ramo, and Brown (2009) found that physiological and social changes that happen in the period of adolescence show differential affects for boys and girls as they navigate through emerging adulthood. For example, boys have a later maturation in brain structures and executive functioning, have a lower response to alcohol, and have greater estimates of perceived peer alcohol use, all of which contribute to higher rates of use (Schulte et al., 2009). Finally, in comparison to females, males engage in greater impulsivity and higher levels of sensation-seeking which are related to heavy- drinking (Zuckerman & Kuhlman, 2000).

Current Study

The present study tested predictions drawn from the Family Stress Model to better understand how economic pressure and family stress processes as experienced in adolescence is related to offspring binge drinking in emerging adulthood. Data were from a two-decade longitudinal study of a cohort of rural adolescents and their families followed from early adolescence to adulthood. Specifically, the influence of economic pressure when youth were in early adolescence (13 years old) on mothers' and fathers' emotional distress, interparental harsh couple interaction, and harsh parenting assessed when youth were in middle adolescence (14–15 years old) was examined. Harsh parenting was then used to predict offspring drinking behavior at age 16, which was used to predict binge drinking in late adolescence into emerging adulthood (18 and 23 years old, respectively). This model allowed for testing of longitudinal relations between economic pressure, family processes, and offspring drinking outcomes. Thus, the current investigation extends the body of literature on the Family Stress Model framework, as well as predictors of drinking behavior into the emerging adult years.

In line with the Family Stress Model (see Figure 1), it was expected that economic pressure in early adolescence will be associated with parents' emotional distress, which will be

related to harsh couple interaction, and harsh couple interaction will be related to harsh parenting when youth were in middle adolescence. Harsh parenting was expected to be directly associated with offspring drinking behavior one year later, at age 16. Adolescent drinking at age 16 was expected to be associated with binge drinking behavior at age 18, which was expected to be associated with binge drinking at age 23. Finally, parents' emotional distress, harsh couple interaction, and harsh parenting was expected to mediate the association between economic pressure and offspring emerging adult binge drinking, and harsh parenting was expected to mediate the association between harsh couple interaction and offspring drinking behavior at age 16. To provide a more rigorous test, the present investigation controlled for youth alcohol use in early adolescence, at age 13, as well as parent use and parental educational attainment. Emerging adult educational attainment was also taken into account. Finally, the model was examined separately by parent, and moderated by offspring gender.

Methods

Participants

The present study used data from the Iowa Youth and Families Project (IYFP) which was collected annually from 1989 through 1994, consisting of 451 adolescents and their parents. Participants were initially recruited after the farm crisis of the 1980s from 34 public and private schools across eight rural counties in Iowa, with populations of 6,500 or less. Families were first interviewed in 1989 when adolescents were in seventh grade (M age = 13.2 years; 236 girls, 215 boys), and 99% of participants were White. Seventy-eight percent of eligible families agreed to participate. In 1989, the first year of data collection, parents had a median family income of \$33,700 and completed an average of 13 years of schooling. Families averaged 4.94 members, and size ranged from four to 13 members. Fathers' mean age was 40 and mothers' mean age was 38. In 1994, families who participated in the IYFP continued on in a different project, known as the Family Transitions Project (FTP). The same youth participated in the FTP in order to follow their transition into emerging adulthood.

The present investigation included offspring who participated from early adolescence into emerging adulthood ($n = 451$; 236 girls, 215 boys). The data were analyzed at five developmental time periods. The first examined economic pressure in 1989 when adolescents were 13 years old. The second occurred in 1990 and 1991 when youth were 14 and 15 years old and examined parents' emotional distress, harsh couple interaction, and harsh parenting. The third time period, in 1992, examined offspring drinking behavior when youth were 16 years of age. Binge drinking was examined in 1994 at time 4, when adolescents were 18 years old, and in 1999 (time 5) at age 23. This project has been approved by the Institutional Review Board at Iowa State University.

Procedure

During adolescence, all families were visited by a trained interviewer in their homes twice per year. Visits lasted approximately two hours and the second visit followed within two weeks of the first visit. Monetary incentives were provided for families who participated.

During the first visit, each family member completed questionnaires in the areas of individual characteristics and family relationships. During the second visit, each family also participated in a videotaped structured marital task and a family discussion task lasting approximately 25 minutes each. In the marital task, wives and husbands discussed questions regarding how they met, how their relationship has changed or stayed the same over the duration of their marriage, and what sources of conflict may be in their relationship. Wives and husbands took turns reading the questions. The spouse who drew the card first responded to the question, which was followed by the other spouse's response to the question. A discussion about the answers to the questions occurred before the couple proceeded to the next card. In the family discussion task, parents and their adolescent discussed questions regarding family life such as household chores and rules, events, and sources of conflict. Parents and their adolescent each took turns reading questions. The person who drew the card first responded to the question, followed by the other person's response. They then discussed the answers that were given. Participants were instructed to move to the next card when discussion about the question had finished. The Iowa Family Interaction Rating Scale (IFIRS), which has previously been shown to exhibit sufficient validity and reliability (Melby & Conger, 2001), was used by trained observers to code the quality of the interactions. It should be noted that the marital task and the family discussion task were coded by different sets of observational coders to ensure each task was coded without previous knowledge of family characteristics that could carry over from one task to the other, as families participated in both the marital task and the family discussion task in the same visit. Coders received approximately 90 hours of training and had to sustain consistent 80% agreement. All tasks were coded by a primary coder and, for reliability purposes, 25% of the tasks were randomly assigned to be coded by a second reliability coder. Interrater reliability coefficients for the behaviors used in the current study ranged from .54 to .91.

Beginning in 1995, adolescents, now emerging adults, were visited every other year in their home by a trained interviewer. During these visits, they completed a series of different questionnaires on topics such as individual characteristics, family relationships, social behaviors, and health.

Measures

The means, standard deviations, as well as minimum and maximum scores for all study variables are provided in Table 1.

Economic pressure (Time 1).—Economic pressure (Conger et al., 1992) was assessed when the adolescent was 13 years old as a latent construct comprised of three indicators: unmet material needs, can't make ends meet, and financial cutbacks. For unmet material needs, parents responded to six items asking whether they had enough money to afford adequate housing, clothing, furniture, car, food, and medical care. Items such as, "I have enough money to afford the kind of clothing that I should have" and "I have enough money to afford the kind of place to live in that I should have" were answered on a scale from 1 (strongly agree) to 5 (strongly disagree). All items were summed together ($\alpha = .93$).

The second indicator of economic pressure was the inability to make ends meet. Parents answered two items on whether they had difficulty paying their bills in the past 12 months on scale of 1 (a great deal of difficulty) to 5 (no difficulty at all), and how much money they have left at the end of each month over the past 12 months on a scale of 1 (more than enough money left over) to 4 (not enough to make ends meet). The first item was recoded and both items were standardized and summed together ($r = .84$). The final indicator for economic pressure was financial cutbacks and consisted of 29 items that asked the parent whether they had made significant financial adjustments because of financial need in the past year. Questions included items such as postponing dental or medical care, changing eating or food shopping habits to save money, and taking an extra job to help meet family expenses. For example, “During the past 12 months, have you reduced driving a car to save money?” “During the past 12 months, have you changed food shopping or eating habits to save money?” Each item was answered by 1 (yes) or 2 (no). All items were reverse coded, summed together and revealed sufficient internal consistency ($\alpha = .88$).

Emotional distress (Time 2).—Emotional distress was assessed through parent self-report using the depression, anxiety, and hostility subscales from the SCL-R-90 (Derogatis, 1994) when the adolescent was 14 and 15 years old. Response categories assessed how distressed the parent felt during the past week, ranging from 1 (not at all) to 5 (extremely). For the depression scale, mothers and fathers were asked 13 questions regarding depressive symptoms such as crying easily or feelings of worthlessness. The anxiety subscale included 10 questions assessing behavior such as nervousness or shakiness inside, suddenly feeling scared for no reason, and feeling fearful. Finally, hostility included 6 items asking questions related to feeling easily annoyed or irritated, having temper outbursts that you were unable control, and having the urge to break or smash things. Items from each subscale were averaged for each parent across the two time points and used as a separate indicator for the latent construct for each parent ($\alpha = .88$ for mothers, $\alpha = .84$ for fathers).

Harsh couple interaction (Time 2).—Interparental hostility, antisocial behavior, and angry coerciveness from one spouse toward the other during the video-taped marital discussion task was assessed when the adolescent was 14 and 15 years old (Neppl et al., 2016). Each rating was scored on a 9-point scale, ranging from 1 (no evidence of the behavior) to 9 (the behavior is highly characteristic of the spouse). Hostility was characterized by hostile, annoyed, critical, and disapproving behavior toward the other spouse. Angry coercion was defined by an attempt to control or change the other person’s behavior in a hostile manner. Antisocial behavior involved egotistic, immature, rebellious, and indifferent behavior toward the other spouse. Scores across the two years were averaged by parent, and each behavior was used as a separate indicator making up the latent construct for each spouse ($\alpha = .90$ for mothers, $\alpha = .83$ for fathers). The interrater reliability was adequate for hostility ($\alpha = .89$ for mothers, $\alpha = .94$ for fathers), angry coercion ($\alpha = .78$ for mothers, $\alpha = .50$ for fathers), and antisocial behavior ($\alpha = .92$ for mothers, $\alpha = .87$ for fathers).

Harsh parenting (Time 2).—Parental hostility, antisocial behavior, and angry coerciveness toward their adolescent during the videotaped family discussion task was

assessed when the adolescent was 14 and 15 years old (Neppl et al., 2016). Each rating was scored on a 9-point scale, ranging from 1 (no evidence of the behavior) to 9 (the behavior is highly characteristic of the parent). Hostility was characterized by hostile, annoyed, critical, and disapproving behavior toward the adolescent. Angry coercion was defined by an attempt to control or change the other person's behavior in a hostile manner. Antisocial behavior involved egotistic, immature, rebellious, and indifferent behavior toward the adolescent. Scores across the two years were averaged by parent, and each behavior was used as a separate indicator making up the latent construct for each parent ($\alpha = .91$ for mothers, $\alpha = .88$ for fathers). The interrater reliability was adequate for hostility ($\alpha = .86$ for mothers, $\alpha = .88$ for fathers), angry coercion ($\alpha = .69$ for mothers, $\alpha = .54$ for fathers), and antisocial behavior ($\alpha = .79$ for mothers, $\alpha = .89$ for fathers).

Alcohol use in middle adolescence (Time 3).—At age 16, adolescents responded to three separate questions regarding their involvement in the use of alcohol in the past 12 months. Specifically, adolescents reported on their frequency of drinking beer, wine, and liquor in the past 12 months on a scale from 0 (never) to 3 (3 or more times per week). Scores for adolescent alcohol use were then averaged together across the three items and used as a manifest variable in the model ($\alpha = .87$; Conger et al., 1994).

Binge drinking in late adolescence and emerging adulthood (Times 4 and 5).—Adolescents at age 18 and again at age 23 in emerging adulthood reported on both their frequency of having 3 or 4 drinks in a row and having 5 or more drinks in a row on a scale from 1 (never) to 7 (every day). The mean of the two items was used to create a manifest variable at each time point in the model ($r = .90$, $p < .001$ in late adolescence, $r = .88$, $p < .001$ in emerging adulthood).

Control variables.—When the adolescent was 13 years old, each parent reported on his/her highest level of education completed ranging from 0 (no grade completed) to 20 (PhD or professional degree) and used as separate manifest variables in the model. Parent recent binge drinking was used when the adolescent was 13 years old. Mothers and fathers indicated if they had consumed 4 or more alcoholic drinks on the same occasion in the past month (1 = yes, 0 = no). Scores were averaged across parents and used as a manifest control variable. Adolescents also reported on their use of beer, wine, and liquor when they were 13 years old (1 = have drunk alcohol, 0 = have not drunk alcohol). Finally, emerging adulthood education level was assessed when offspring were 23 years old. Each emerging adult reported on his/her highest level of education completed ranging from 0 (no grade completed) to 20 (PhD or professional degree).

Analytic Plan

SPSS was used to report means, standard deviations, and Cronbach's alphas on all study variables. The zero-order associations between variables, using bivariate correlations at a significance level of 0.05 were examined. Attrition analyses were conducted to examine if offspring assessed in the present analysis were different than those who did not participate. Results indicated that offspring whose fathers were more educated were more likely to participate in emerging adulthood. The small effect size of .01 indicates minimal threat to

the validity of the present analyses. Structural equation models (SEM) were utilized to examine pathways of how predictor variables were associated with outcome variables on the hypothesized paths (see Figure 1). A measurement model was first examined with loadings of the indicators for mothers and fathers on the latent variables fixed to be equal, in order to ensure constructs for mothers and fathers were measured equally. Next, the SEM with controls was tested to examine the hypothesized pathways, and further tested to understand whether the hypothesized pathways differed in magnitude between mothers and fathers by assessing the chi-square difference test between a free and fixed SEM. The control variables including mothers' and fathers' education, parent alcohol use, and early adolescent alcohol use were each used to predict the endogenous variables. Emerging adult education was only used to predict emerging adult binge drinking at 23, due to the temporal ordering of the study variables.

In addition to examining causal pathways, indirect effects were also tested. Mediating pathways were tested using bootstrapped sampling in *Mplus* from economic pressure to emerging adulthood binge drinking through mothers' and fathers' emotional distress, harsh couple interaction, harsh parenting, middle adolescent drinking, and late adolescent binge drinking. The specific indirect effect of harsh couple interaction on drinking at age 16 through mothers' and fathers' harsh parenting was also examined. Additionally, the specific indirect effect from mothers' and fathers' emotional distress to drinking at age 16 through mothers' and fathers' harsh couple interaction and harsh parenting was tested. The indirect pathway of age 16 drinking behavior on age 23 binge drinking via age 18 binge drinking was also examined. Finally, moderation by offspring gender was tested in the following regression pathways: mothers' harsh parenting to drinking in middle adolescence, fathers' harsh parenting to drinking in middle adolescence, drinking in middle adolescence to late adolescent binge drinking, and late adolescent binge drinking to emerging adulthood binge drinking. Moderation in the following variables was also examined: age 16 alcohol use, age 18 binge drinking, and age 23 binge drinking.

Results

Associations among Study Variables

Correlations among the theoretical constructs and the control variables were examined (see Table 2). Economic pressure was positively associated with both mothers' emotional distress ($r = .35, p < .001$) and fathers' emotional distress ($r = .20, p < .001$). For mothers, emotional distress was positively associated with harsh couple interaction ($r = .21, p < .001$), and harsh couple interaction was associated with harsh parenting ($r = .54, p < .001$). For fathers, harsh couple interaction was positively associated with harsh parenting ($r = .54, p < .001$). In terms of offspring alcohol use variables, drinking at age 16 was positively associated with binge drinking at 18 years old ($r = .34, p < .001$), and binge drinking at age 18 was associated with emerging binge drinking at age 23 ($r = .30, p < .001$). Economic pressure was not significantly associated with drinking in middle adolescence, binge drinking in late adolescence, or binge drinking in emerging adulthood. The hypothesized model does not predict a direct association between economic pressure and emerging adult binge drinking, but instead links offspring binge drinking behavior through family processes. Thus, the

resulting patterns of associations were consistent with our expectations and further justified the formal test of the model.

SEM analyses were conducted in *Mplus* Version 8.0 (Muthen & Muthen, 2012) to examine pathways of how predictor variables were associated with outcome variables on the hypothesized paths using full information maximum likelihood (FIML) procedures (Arbuckle, 1997) to handle any missing data. FIML is a widely recommended and commonly used procedure in longitudinal research to deal with missing data (Allison, 2003). Compared to other procedures such as listwise or pairwise deletion, FIML provides a better estimation of model parameters (Jelić, Phelps, & Lerner, 2009). Standardized coefficients were used for all paths in the model. Model fit was determined using chi-square, root mean square error approximation (RMSEA), and comparative fit index (CFI; Browne & Cudeck, 1993). A measurement model was first examined with loadings of the indicators for mothers and fathers on the latent variables fixed to be the same, in order to ensure constructs for mothers and fathers were measured equally. For example, mothers' emotional distress was equally constrained with fathers' emotional distress [i.e. hostility (a), depression (b), and anxiety (c)]. Mothers' harsh couple interaction was equally constrained with fathers' harsh couple interaction [i.e. hostility (d), angry coercion (e), and antisocial behavior (f)]. Finally, mothers' harsh parenting was equally constrained with fathers' harsh parenting [i.e. hostility (g), angry coercion (h), and antisocial behavior (i)]. The fit of the measurement model was good: $\chi^2 = 509.15$, $df = 282$, $p < .001$, CFI = .97, RMSEA = .04. Standardized loadings of manifest indicators onto the latent factors ranged from .67 to .95 (see Table 1). As loadings for emotional distress, harsh couple interaction, and harsh parenting were equated across parents, the unstandardized loadings were equal for mothers and fathers. For example, unstandardized loadings for mothers' and fathers' emotional distress were 1.000 for hostility, 1.708 for depression, and 1.094 for anxiety; the first loading of a measured variable on a latent construct is set at 1.000 by default.

Differences between Mothers and Fathers

The free model allowed regression paths of mothers and fathers to be freely estimated. Then, in the fixed model, the regression path from economic pressure to mothers' emotional distress (j), mothers' emotional distress to mothers' harsh couple interaction (k), mothers' harsh couple interaction to mothers' harsh parenting (l), mothers' harsh parenting to age 16 adolescent drinking (m), and the parallel paths for fathers [i.e. economic pressure to fathers' emotional distress (j), fathers' emotional distress to fathers' harsh couple interaction (k), fathers' harsh couple interaction to fathers' harsh parenting (l), fathers' harsh parenting to age 16 adolescent drinking (m)] were equated. According to chi-square difference test results within the nested model approach, there was a significant difference between the fixed and free models, which indicated a significant difference in at least one of the mother and father pathways in the model. To determine which path(s) differed between mothers' and fathers' pathways, the fixed pathway model was used to free one regression pathway at a time across mothers and fathers. Results of this analysis indicated that the magnitude of the Family Stress Model regression coefficients of economic pressure to mothers' and fathers' emotional distress were statistically different, as well as the regression coefficient of mothers' harsh couple interaction to mothers' harsh parenting and fathers' harsh couple

interaction to fathers' harsh parenting. Therefore, only these two regression paths were set to vary between mothers and fathers, and the full model with controls was interpreted.

The Influence of Economic Pressure on Offspring Drinking

Results of the model (see Figure 2) indicated that mothers' and fathers' emotional distress were related ($r = .13, p < .05$), as well as mothers' harsh couple interaction and fathers' harsh couple interaction ($r = .72, p < .001$), and mothers' harsh parenting with fathers' harsh parenting ($r = .52, p < .001$). Economic pressure was significantly related to mothers' emotional distress ($\beta = .36, SE = .05, p < .001$). Mothers' emotional distress was related to mothers' harsh couple interaction ($\beta = .12, SE = .03, p < .001$), and her harsh couple interaction was related to her harsh parenting towards the adolescent ($\beta = .49, SE = .04, p < .001$). Mothers' harsh parenting predicted offspring drinking in middle adolescence ($\beta = .06, SE = .03, p < .05$). Similarly, economic pressure was significantly related to fathers' emotional distress ($\beta = .22, SE = .06, p < .001$). Fathers' emotional distress was related to fathers' harsh couple interaction ($\beta = .12, SE = .03, p < .001$), and his harsh couple interaction was related to his harsh parenting toward his adolescent ($\beta = .59, SE = .04, p < .001$). Fathers' harsh parenting predicted middle adolescent drinking ($\beta = .07, SE = .03, p < .05$). Adolescent drinking behavior at age 16 predicted binge drinking at age 18 ($\beta = .32, SE = .05, p < .001$), which further predicted binge drinking at age 23 ($\beta = .32, SE = .05, p < .001$). The model explains 12% of the variance in middle adolescent drinking. The independent variables explain 14% of the variance in late adolescent binge drinking, and explain 17% of the variance in emerging adulthood binge drinking at age 23. Table 3 provides results of all control variables in the model.

Indirect effects.—All indirect analyses were conducted using *Mplus* (Muthen & Muthen, 2012), and because multivariate normality can be easily violated with multiple indirect effects, bootstrapping techniques were used per the recommendation of Preacher and Hayes (2008) to estimate indirect effects. A bias-corrected bootstrap model (number of iterations = 1,000) was tested, and confidence intervals (CI) of the indirect effects were obtained, and it should be noted that *Mplus* only reports three places after the decimal point in the output. Mother and father regression pathways were constrained to be equal, and controls were used in the mediation analyses in the same manner they were used in the hypothesized SEM analyses. Consistent with our hypothesis, there was a significant indirect effect of economic pressure on emerging adulthood binge drinking through parents' emotional distress, harsh couple interaction, harsh parenting, drinking in middle adolescence, and binge drinking in late adolescence ($b = .000, 95\% \text{ CI } [.000, .000]$). There was also a significant indirect effect of economic pressure on drinking at age 16 through parents' emotional distress, harsh couple interaction, and harsh parenting ($b = .002, 95\% \text{ CI } [.000, .001]$), and on drinking at age 18 ($b = .001, 95\% \text{ CI } [.000, .000]$). Mothers' emotional distress had an indirect association on adolescent drinking at age 16 through mothers' harsh couple interaction and mothers' harsh parenting ($b = .014, 95\% \text{ CI } [.003, .037]$). Likewise, fathers' emotional distress had an indirect association with adolescent drinking at age 16 through his harsh couple interaction and harsh parenting ($b = .014, 95\% \text{ CI } [.003, .037]$). Mothers' harsh couple interaction was associated with adolescent drinking at age 16 through mothers' harsh parenting ($b = .014, 95\% \text{ CI } [.002, .028]$). Similarly, fathers' harsh couple interaction was

associated with adolescent drinking at age 16 through fathers' harsh parenting ($b = .014$, 95% CI [.002, .028]). Finally, adolescent binge drinking at age 18 mediated the association between drinking at age 16 and binge drinking at age 23 ($b = .297$, 95% CI [.152, .473]).

Adolescent gender differences.—The following hypothesized pathways were constrained to be equal across mother and father pathways in a multi-group model [i.e. economic pressure to mothers' emotional distress (n), mothers' emotional distress to mothers' harsh couple interaction (o), mothers' harsh couple interaction to mothers' harsh parenting (p), mothers' harsh parenting to offspring drinking in middle adolescence (q) and economic pressure to fathers' emotional distress (n), fathers' emotional distress to fathers' harsh couple interaction (o), fathers' harsh couple interaction to fathers' harsh parenting (p), fathers' harsh parenting to offspring drinking in middle adolescence (q)]. The control variables were used in the multi-group analysis in the same manner they were used in the hypothesized SEM analyses. Results of a chi-square difference test indicated no gender differences in any of the four regression pathways for girls and boys. In the second analysis of the multi-group model, the means of age 16 drinking for girls and boys were set to be equal. Then, the model was run in which the means of age 16 drinking were allowed to vary for girls and boys. The chi-square values were compared between these two models, and if there was a significant chi-square change with 1 degree of freedom between the two models, a significant difference in the means of that variable for girls and boys would be indicated. This method was repeated for both the age 18 binge drinking and age 23 binge drinking variables. Results indicated the means for girls and boys did not differ on any of the three drinking variables.

Alternative Models

Two alternative models were also tested to further examine the associations between study variables beyond the hypothesized models. The first examined cross pathways between the mothers' family process variables at Time 2 and fathers' family process variables at Time 2. For example, the path between mothers' emotional distress and fathers' harsh couple interaction was examined, as well as the path between fathers' harsh couple interaction and mothers' harsh parenting. This model was estimated in the same way as the hypothesized model outlined above. Mothers' emotional distress was not related to father harsh couple interaction ($\beta = .05$, $SE = .04$, $p = .25$). Similarly, fathers' emotional distress was not related to mothers' harsh couple interaction ($\beta = .05$, $SE = .04$, $p = .25$). Mothers' harsh couple interaction was not related to fathers' harsh parenting ($\beta = .02$, $SE = .10$, $p = .82$). Likewise, fathers' harsh couple interaction was not related to mothers' harsh parenting ($\beta = -.19$, $SE = .10$, $p = .06$).

The second alternative model was a fully recursive model that allowed paths between all variables to be estimated. Even with the addition of cross paths and direct regression paths from economic pressure to all study variables, mothers' harsh parenting and fathers' harsh parenting still predicted offspring drinking in middle adolescence ($\beta = .09$, $SE = .04$, $p < .05$). No other family process variables at Time 2 predicted subsequent offspring drinking behavior.

Discussion

Emerging adulthood marks a developmental time period of transitions and uncertainty about the future. Binge drinking during this period is common and the present study sought to understand how economic pressure when youth were in early adolescence was related to binge drinking patterns during emerging adulthood. Indeed, disrupted family processes may influence the decision to drink alcohol in the adolescent years. Thus, the present investigation prospectively examined hypotheses derived from the Family Stress Model to examine economic pressure and family stress processes as experienced in early and middle adolescence on drinking behavior into emerging adulthood. Specifically, the pathways of economic pressure to parents' emotional distress to harsh couple interaction to harsh parenting to offspring drinking behaviors were assessed. The current study found support for the Family Stress Model, in that economic pressure when youth were in early adolescence (age 13) predicted both mothers' and father's emotional stress in middle adolescence (ages 14 and 15). Also during middle adolescence, mothers' emotional distress was related to her harsh interaction towards her husband and fathers' emotional distress was related to his harsh interaction towards his wife. Mother harsh couple interaction was related to her harsh parenting behavior and fathers' harsh couple interaction was related to his harsh parenting behavior toward the adolescent. Finally, in line with the Family Stress Model, mothers' and fathers' harsh parenting when the adolescent was 14 and 15 predicted higher levels of drinking when the adolescent was 16 years old. This drinking behavior was then associated with binge drinking behavior when the adolescent was 18 years old, which was related to binge drinking at age 23 during emerging adulthood. All in all, these results show that economic pressure, emotional distress, and harsh couple conflict are related to increased levels of harsh parenting which predicts drinking behavior that manifests to binge drinking patterns in later adolescence and emerging adulthood.

In addition to direct effects, there were also significant indirect associations where economic pressure was related to offspring binge drinking in emerging adulthood through parents' emotional distress, harsh couple interaction, and harsh parenting. Harsh parenting also mediated the association between harsh couple interaction and drinking in middle adolescence, which provides further support for the causal ordering of the Family Stress Model (Conger & Conger, 2002). These results suggest that parents who are under economic pressure when youth are in early adolescence influences offspring binge drinking habits 10 years later through disrupted family processes as experienced in middle adolescence. Moreover, there were no gender differences in harsh parenting on adolescent drinking at age 16 or in the continuity of drinking into emerging adulthood. This may be due to the rural nature of the sample. For example, Chan et al. (2016) found that adolescents in rural areas were more likely to drink alcohol than those from major cities, with no gender differences in terms of the likelihood to drink alcohol in the past year.

Altogether, the current results replicate and extend previous studies examining economic pressure, disrupted family processes, and youth outcomes. For example, the current study replicates results utilizing the same sample but extending offspring age into emerging adulthood (Conger & Conger, 2002; Conger et al., 2010), as well as those that have studied these associations with the offspring and their next generation child. For example, Neppi, et

al. (2016) found that pathways of the Family Stress Model operated in a similar fashion when the offspring from the current study became parents themselves. The current investigation also extends work conducted by others. White, Liu, Nair, & Tein (2015) indicated that economic pressure was associated with higher levels of harsh parenting which was related to increases in adolescent externalizing behavior. Similarly, Ponnet (2014) investigated financial stress and found that parental depressive symptoms, parental conflict, and parenting mediated the association between financial stress and adolescent problem behavior. Many studies utilizing the Family Stress Model use cross-sectional data (Conger et al., 2010) or omit certain pathways of the model such that they may include harsh parenting but not marital conflict (see Neopl, et al., 2016). Thus, the current study extends research by including all family related pathways of the Family Stress Model, specifically examining how economic pressure in early adolescence influences family processes in middle adolescence and drinking behaviors into emerging adulthood.

Limitations

It should be noted there are limitations of this study. First, the current sample is restricted in terms of ethnic and racial diversity, which could limit generalizability of results; however, earlier studies have found similar results using culturally and racially diverse samples (Benner & Kim, 2010). Second, although the data were collected some time ago, binge drinking rates in the current study are similar to national data for the region and age of the sample (SAMHSA, 2016). For example, in a recent nationally representative sample, 28.7% of those 18 and older who lived in the Midwest binge drank in the past month which was higher than other regions of the United States including the Northeast (27.8%), South (25.5%), and West (26.8%) (SAMHSA, 2016). Moreover, while research suggests there has been a decrease in adolescent alcohol use since the 1990s, binge drinking rates among Midwestern, non-urban youth are still of concern, due to the high likelihood this will continue into the adult years (SAMHSA, 2016; Thompson et al., 2014). Third, the binge drinking variable included, “During the past 30 days, how often did you have 3 or 4 drinks in a row?” and “During the past 30 days, how often did you have 5 or more drinks in a row?” thus it is plausible that participants could have overlapping answers. The current study was also unable to separate 4 drinks for females and 5 drinks for males per the binge drinking definition. Finally, adolescents self-reported their drinking while still living at home with their parents. However, large national datasets use self-reported data on substance use (SAMHSA, 2016), and at the last time point of the current study, most emerging adults were living outside their childhood home.

Future Directions

It could be hypothesized that early adolescent drinking behavior influences parents’ emotional distress, thus impacting their marital relationship and harsh parenting behavior. To account for this, early adolescent alcohol use was controlled for in the causal model to be sure that associations among the variables were consistent with pathways of the Family Stress Model. Early adolescent drinking was not related to parents’ emotional distress, harsh couple interaction, or harsh parenting, though it was significantly associated with drinking at ages 16 and 18. Future research could examine true reciprocal relations between pathways using a cross-lagged panel design, based on such associations over time. Future research

could also examine if these binge drinking patterns continue beyond emerging adulthood into later adulthood when individuals are more settled into work and family life. Finally, resiliency factors such as optimism or positive parenting could buffer the associations between economic adversity, family processes, and adolescent outcomes. For example, Jeon and Neppi (2016) found that positivity and positive parenting were transmitted across generations, even during times of economic adversity. Despite these limitations and areas of future work, the current study utilizes a prospective longitudinal design to help explain the influence of economic pressure on binge drinking in emerging adulthood through parents' emotional distress, harsh couple interaction, harsh parenting, middle adolescent drinking, and late adolescent binge drinking. Multiple reporters such as the use of self-report and observational measures were also used.

Conclusion

The Family Stress Model proposes that disrupted family processes may help explain the association between economic adversity and poor child developmental outcomes. Studies utilizing a Family Stress Model framework have examined the influence of economic pressure and family stress processes on adolescent delinquency and alcohol use (Benner & Kim, 2010; Conger et al., 1991), but less is known about how such processes as experienced in adolescence impact offspring drinking behaviors into the emerging adult years. The present study links economic pressure during early adolescence to offspring drinking behavior in emerging adulthood through parents' emotional distress, harsh couple interaction, and harsh parenting in middle adolescence. Further, this study lends support for the continuity of drinking behavior from middle adolescence to emerging adulthood. Specifically, economic pressure as experienced when adolescents were 13 years old was associated with their binge drinking behavior at age 23 through disrupted family processes as experienced at ages 14 and 15, as well as alcohol use at age 16, and binge drinking behavior at age 18. This study demonstrates the long-term cascading effect that economic adversity has on both family interactions and offspring development. Thus, understanding the impact economic pressure has on interpersonal and family relationships, as well as binge drinking over time can help inform policy makers and mental health professionals working with individuals and families living in unstable economic times. Furthermore, this study demonstrated continuity of drinking behavior from middle adolescence to emerging adulthood. Indeed, alcohol continues to be the primary substance of use in treatment centers, compared to marijuana, methamphetamine, cocaine, heroin, and other substances (IODCP, 2016), so it is imperative that research continues to investigate familial factors that contribute to the manifestation of problem drinking. It is important to curb binge drinking patterned behavior in adolescence, so that youth can transition smoothly into respected roles and responsibilities in emerging adulthood.

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Figure 1.
Conceptual Model

Note. Standardized beta coefficients shown in the model. Model fit: $\chi^2 = 596.72$, $df = 325$, $p < .001$, CFI = .96, RMSEA = .04.

* $p < .05$. *** $p < .001$.

Figure 2.
Structure Equation Model

Table 1

Descriptive Statistics of Study Variables (N = 451)

Study Variables	Minimum	Maximum	Mean	SD	N	Std. Loading
Economic pressure						
Material needs	6.00	29.00	14.69	4.12	451	.80
Ends meet	-3.50	4.05	0.00	1.65	451	.87
Cutbacks	0.00	14.00	5.18	3.81	451	.79
Mother emotional distress						
Depression	1.00	4.08	1.48	0.47	428	.79
Anxiety	1.00	3.65	1.27	0.35	428	.82
Hostility	1.00	3.67	1.30	0.33	428	.95
Father emotional distress						
Depression	1.00	3.73	1.32	0.37	428	.67
Anxiety	1.00	2.95	1.18	0.26	428	.84
Hostility	1.00	3.50	1.24	0.30	428	.93
Mother harsh couple interaction						
Hostility	1.00	9.00	3.47	2.03	421	.93
Angry coercion	1.00	8.00	1.94	1.32	421	.69
Antisocial behavior	1.00	9.00	3.15	1.44	421	.87
Father harsh couple interaction						
Hostility	1.00	9.00	2.78	1.73	421	.89
Angry coercion	1.00	7.00	1.41	0.79	421	.75
Antisocial behavior	1.00	9.00	3.13	1.60	421	.74
Mother harsh parenting						
Hostility	1.00	9.00	3.88	1.73	427	.91
Angry coercion	1.00	9.00	2.14	1.42	427	.71
Antisocial behavior	1.00	9.00	3.66	1.42	427	.94
Father harsh parenting						
Hostility	1.00	9.00	3.72	1.86	423	.93
Angry coercion	1.00	7.00	1.97	1.27	423	.76
Antisocial behavior	1.00	9.00	3.88	1.70	421	.89
Middle adolescent drinking	0.00	3.00	0.46	0.50	403	
Late adolescent binge drinking	1.00	6.00	2.90	1.42	400	
Emerging adult binge drinking	1.00	6.00	2.90	1.42	400	
Mother education	9.00	18.00	13.28	1.65	450	
Father education	8.00	20.00	13.48	2.13	451	
Parent alcohol use (1=yes)	0.00	1.00	0.24	0.32	451	
Early adolescent alcohol use (1=yes)	0.00	1.00	0.19	0.28	451	
Emerging adult education	9.00	19.00	14.72	1.69	405	

Note. All standardized factor loadings are significant at $p < .001$.

Table 2

Correlations among Study Constructs

Study Constructs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Economic Pressure	-														
2. Mother Emotional Distress	.35***	-													
3. Father Emotional Distress	.20***	.18***	-												
4. Mother Harsh Couple Interaction	.12*	.21***	.08	-											
5. Father Harsh Couple Interaction	.08	.08	.08	.75***	-										
6. Mother Harsh Parenting	.11*	.15**	-.04	.54***	.34***	-									
7. Father Harsh Parenting	.16**	.08	.04	.47***	.61***	.58***	-								
8. Middle Adolescent Alcohol Use	.05	-.03	.01	.03	.07	.16**	.15**	-							
9. Late Adolescent Binge Drinking	.05	-.02	-.01	.03	.04	.10*	.13*	.34***	-						
10. Emerging Adult Binge Drinking	-.02	-.06	-.03	-.01	.00	-.04	-.02	.30***	.34***	-					
11. Mother Education	-.25***	-.01	-.02	-.17**	-.20***	-.27***	-.25***	-.17**	-.03	-.05	-				
12. Father Education	-.23***	-.10*	.04	-.15**	-.13*	-.20***	-.20***	-.15**	-.09	-.10*	.46***	-			
13. Parent Alcohol Use	.03	-.01	.01	.00	.02	.02	.10	.10*	.11*	.19***	-.09	-.06	-		
14. Early Adolescent Alcohol Use	.04	-.05	.01	.04	.03	.04	.06	.25***	.18***	.10*	-.06	.00	-.03	-	
15. Emerging Adult Education	-.31***	-.21***	-.04	-.13*	-.12*	-.26***	-.27***	-.19***	-.14**	.03	.36***	.32***	-.13**	-.04**	-

*p < .05.

**p < .01.

***p < .001.

Table 3

Standardized Coefficients of Covariates in SEM

Predictor	β	t
Economic pressure		
Mother education, Father education	-0.17 ^{***} , -0.15 ^{***}	-3.17, -2.78
Parent alcohol use	0.01	0.13
Early adolescent alcohol use	0.03	0.58
Mother emotional distress		
Mother education, Father education	0.10, -0.07	1.78, -1.22
Parent alcohol use	-0.02	-0.45
Early adolescent alcohol use	-0.02	-1.32
Father emotional distress		
Mother education, Father education	0.00, 0.10	-0.07, 1.69
Parent alcohol use	0.00	0.08
Early adolescent alcohol use	0.00	0.07
Mother harsh couple interaction		
Mother education, Father education	-0.13 [*] , -0.08	-2.26, -1.48
Parent alcohol use	-0.01	-0.18
Early adolescent alcohol use	0.04	0.78
Father harsh couple interaction		
Mother education, Father education	-0.17 [*] , -0.06	-2.92, -1.00
Parent alcohol use	0.00	-0.06
Early adolescent alcohol use	0.02	-0.38
Mother harsh parenting		
Mother education, Father education	0.17 ^{***} , -0.05	-3.50, -0.97
Parent alcohol use	0.00	-0.04
Early adolescent alcohol use	0.02	0.34
Father harsh parenting		
Mother education, Father education	-0.09, -0.07	-1.93, -1.52
Parent alcohol use	0.08	1.77
Early adolescent alcohol use	0.03	0.81
Middle adolescent alcohol use		
Mother education, Father education	-0.07, -0.09	-1.36, -1.67
Parent alcohol use	0.09 [*]	1.97
Early adolescent alcohol use	0.24 ^{***}	5.16
Late adolescent binge drinking		
Mother education, Father education	0.07, -0.07	1.30, -1.30
Parent alcohol use	0.08	1.82
Early adolescent alcohol use	0.10 [*]	2.23
Emerging adult binge drinking		

Predictor	β	t
Mother education, Father education	-0.02, -0.10	-0.44, -1.88
Parent alcohol use	0.17 ***	3.71
Early adolescent alcohol use	0.05	1.11
Emerging adult education	0.14 **	2.75

* $p < .05$.

** $p < .01$.

*** $p < .001$.