

Long-Term Effects of Parenting Practices During Adolescence on Well-Being Outcomes in Young Adulthood

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Abstract:

This research investigated the consequences of parent-child relationships during adolescence for young adults' well-being and substance use. Analysis of longitudinal data from the National Survey of Families and Households provided support for the hypothesis that parent-adolescent relationships have long-term consequences for young adult well-being and behavior. The findings are consistent with individuation theory and show that coercive parental control in adolescence is associated with lower well-being and more substance use in young adulthood. The long-term effects of parenting were mediated in part by the effects of parenting on adolescent adjustment, which influenced well-being in young adulthood.

Article:

The transition from adolescence to young adulthood presents a new set of developmental challenges and threats to well-being. There is mounting evidence that young adulthood (defined here as ages 18 to 25) is often experienced as stressful by youth (Rindfuss, 1991). Evidence from interviews with young adults in the National Survey of Families and Households (NSFH) (Aquilino, 1999) shows that episodes of depression are common among adults ages 18 to 25. Nearly one in four of the young adults in the NSFH sample rated their life satisfaction as low, whereas only 21% rated life satisfaction as very high. In addition, data from the National Household Survey on Drug Abuse (Office of Applied Studies, 1998) show that over the past 20 years, 18- to 25-year-olds have had higher rates of illicit drug use than any other age group, with peak drug use among 18- to 20-year-olds. This age group also has the highest rates of binge drinking and other problem drinking compared with those of all other age groups from the age of 12 onward. Thus, research is needed to understand how early family experiences, and parenting in particular, influence development and well-being during the transition to adulthood.

The purpose of this study was to investigate the long-term influence of parenting during adolescence on well-being in young adulthood. An extensive body of research demonstrates that parental behaviors intended to control and socialize adolescent children influence their developmental outcomes (Peterson & Hann, 1999). Moreover, research and theory focused on the effects of parenting styles and behaviors suggest that parenting strategies are critical to positive or negative development during adolescence. Despite the extensive research and theoretical work in this area, the extent to which the influence of parenting extends into young adulthood is unclear. Our central research question asks whether parenting behaviors during adolescence continue to exert influence on well-being and risk-taking behavior when sons and daughters reach young adulthood. We also assess whether the effects of earlier parenting on young adult adjustment are direct or indirect. We explore the possibility that the long-term effects of parenting on young adult outcomes are mediated by the proximal influence of parenting on adolescent behavior, which in turn exerts long-term influence on development in young adulthood.

THEORETICAL FRAMEWORK

Individuation theory. Individuation theory provides a framework for assessing optimal parenting strategies as children move through adolescence (Allen, Hauser, Bell, & O'Connor, 1994; Grotevant & Cooper, 1986). A critical developmental task during adolescence is for youth to individuate from their families to establish a degree of autonomous functioning in their social worlds, including their peer group, workplace, school, and romantic relationships. Individuation involves older adolescents and young adults' achieving a relational shift from dependence on parents to autonomy from parents and a more peer-like mutuality (Paikoff & BrooksGunn, 1991; Smollar & Youniss, 1989; Steinberg, 1987; White, Speisman, & Costos, 1983).

Parental behavior can inhibit or encourage adolescents' movement toward individuation. Parents who deny their children sufficient freedom to pursue friendships, date, or make decisions may inhibit the development of appropriate levels of psychological autonomy and individuality (Allison & Sabatelli, 1988; Barber, 1997; Barber, Olsen, & Shagle, 1994; Grotevant & Cooper, 1986; Herman, Dornbusch, Herron, & Herting, 1997; Hill & Holmbeck, 1986; Peterson & Hann, 1999; Steinberg, 1990). Adolescents require both supportive guidance from parents and opportunities to develop individuality and autonomy (Smollar & Youniss, 1989). Optimal individuation is promoted by parents who allow children sufficient autonomy to explore possible social roles and identities within the context of a supportive, connected relationship (Peterson, Bush, & Supple, 1999; Ryan & Lynch, 1989). Conversely, parents who are intrusive, overly punitive, coercive, or psychologically manipulative or who refuse to allow their children to participate in family decision making may inhibit this process (Barber et al., 1994; Quintana & Lapsley, 1990).

Successful individuation coupled with continued support from parents leads to positive psychosocial competence beyond adolescence. For example, college students who have positive feelings toward their parents during the individuation process are better adjusted socially and academically (Rice, Cole, & Lapsley, 1990). Kenney (1987) reported that although college students expected their parents to encourage independence, they also relied on parents for emotional support. Adolescents who develop autonomy within the context of a warm, supportive relationship with their parents score higher on measures of identity, role-taking skill, ego development, and ability to take responsibility for their own decisions (Cooper, Grotevant, & Condon, 1983; Grotevant & Cooper, 1986; Peterson et al., 1999; White et al., 1983). Intrusive, psychologically controlling parenting may induce guilt in adolescents that inhibits movement toward independent functioning and psychological maturity and also promotes depression and delinquency (Barber et al., 1994; Baumrind, 1991; Gavazzi & Sabatelli, 1990; Peterson et al., 1999). Moreover, adolescents who experience little resistance from parents about their developing independence demonstrate higher self-esteem, psychosocial adaptation, and ability to establish intimate relationships (Allison & Sabatelli, 1988; Bartle, Anderson, & Sabatelli, 1989; Gavazzi & Sabatelli, 1990). Adolescents who report higher levels of perceived psychological autonomy tend to get better grades, report less drug use, and exhibit fewer deviant behaviors in school (Herman et al., 1997).

Parenting theory. Parental support and control are the two key dimensions for understanding how parenting influences developmental outcomes (Maccoby & Martin, 1983; Rollins & Thomas, 1979). Parenting behaviors most conducive to the adolescent individuation process include democratic parenting, support, and connectedness (Barber, 1997; Peterson & Hann, 1999). In addition, continued monitoring and supervision are necessary to ensure that adolescents do not develop problematic behaviors, become too peer oriented, or engage in risky behaviors such as tobacco, alcohol, and drug use (Barnes & Farrell, 1992; Brown, Mounts, Lamborn, & Steinberg, 1993; Fuligni & Eccles, 1993). Parenting that inhibits individuation is typically authoritarian, controlling, coercive, emotionally detached, and unsupportive.

Support from parents includes verbal expressions of love, affection, praise, encouragement, and companionship. These parenting behaviors positively predict elements of social competence in adolescents, including higher self-esteem, autonomy, and academic achievement (Barber, 1997; Herman et al., 1997; Openshaw & Thomas, 1986; Robinson, 1995; Rollins & Thomas, 1979). Supportive parenting is negatively associated with drug and

alcohol use, school misconduct, deviant behavior, and depressive symptoms among adolescents (Barnes & Farrell, 1992; Garber, Robinson, & Valentiner, 1997).

Parental control includes monitoring-supervision, reasoning, democratic parenting, punitiveness, and psychological coercion (Barber et al., 1994; Barnes & Farrell, 1992; Peterson & Hann, 1999). Monitoring and democratic parenting are characterized as firm control, whereas punitiveness and psychological overcontrol are forms of coercive control. Coercive parental control (punitiveness and psychological control) is associated with poor developmental outcomes in youth (Maccoby & Martin, 1983).

Democratic parenting is characterized by a clear statement of rules, use of reasoning, and allowing children to participate in rule setting. Monitoring involves efforts by parents to supervise adolescents' free-time activities, including dating, sexual behavior, and school work, and to assess mental health and signs or symptoms of drug use to prevent the development of problematic behaviors. Parents who do not regularly monitor their children's activities are at increased risk for allowing developmental problems to emerge unchecked in their teenage offspring. For example, children from homes characterized as low in monitoring have been found to use drugs more frequently than children from homes in which parents supervise adolescent behavior more closely (Baumrind, 1991; Brown et al., 1993). Moreover, parental monitoring has been found to positively predict academic achievement and self-reliance and to negatively predict drug use and externalizing behaviors in youth (Barber, 1997; Barber et al., 1994; Barnes & Farrell, 1992; Brown et al., 1993; Hermanet al., 1997). Specific parental monitoring behaviors that have been found to be positive predictors of academic achievement in adolescents include restrictions on the amount of television viewing, familiarity with their children's friends, and talking with adolescents about school-related experiences and expectations (Muller & Kerbow, 1993).

Punitive parental control is the use of arbitrary force with the goal of coercing children into conformity with parental demands (Barnes & Farrell, 1992; Rollins & Thomas, 1979). Research shows positive relationships between coercive parenting and adolescent deviance, school misconduct, problem behaviors, and externalizing problems (Ary et al., 1999; Barnes & Farrell, 1992; DeBaryshe, Patterson, & Capaldi, 1993).

Consistent with individuation and parenting theories, we tested the following hypotheses linking parent-adolescent relations to young adult outcomes:

Hypothesis 1: Parent-adolescent relationships characterized by parental warmth and support, a democratic discipline style, high levels of parental monitoring and supervision, and low levels of coercive control will be related to better adjustment among adolescents (fewer problem behaviors, higher school performance).

Hypothesis 2: Adolescents' adjustment (fewer problem behaviors, higher school performance) will be associated with higher levels of psychological well-being and lower levels of substance use in young adulthood.

Hypothesis 3: Parent-adolescent relationships characterized by parental warmth and support, democratic discipline style, high levels of parental monitoring and supervision, and low levels of coercive control will be associated with higher levels of psychological well-being and lower levels of substance use in early adulthood.

Hypothesis 4: The long-term influence of parenting during adolescence on young adult outcomes will be mediated, at least in part, by adolescent adjustment.

METHOD

DATASET

The data for this study were taken from the first and second waves of the NSFH (Sweet, Bumpass, & Call, 1988). The NSFH is a longitudinal data set comprising 13,007 interviews with adults who reside in the United States. Probability sampling was used to select main respondents, and double-sampling was included to attain

sufficient numbers of respondents from underrepresented populations (ethnic minority respondents, single parents, stepfamilies). The subsample for analysis in this research includes the 1,066 focal children age 18 and older who were interviewed at the second wave of data collection and whose parents were interviewed at both Time 1 (1987-1988) and Time 2 (1992-1993). The focal children were 12 to 18 years old at Time 1 and 18 to 24 years old at Time 2. Characteristics of the respondents are shown in Table 1. Most parents in the sample were in their 40s or 50s, with an average age of 47 years, at Time 1. One half of the focal children were living in two-biological-parent families at Time 1 ($n = 533$), whereas about 30% were living in single-parent families ($n = 321$) and about 20% in stepparent families ($n = 208$).

TABLE 1
Sample Characteristics of Parents and Young Adult Children
From Time 2 of the National Survey of Families
and Households ($N = 1,066$)

Parent characteristics	
Female	.70
Male	.30
Average age (years)	47
Black	.14
Hispanic	.06
Less than high school	.14
High school graduate	.43
Some college	.24
College graduate	.19
Family structure—Time 1	
Two biological/adoptive parents	.51
Single parent	.31
Stepparent	.18
Median family income	\$42,800
Child characteristics	
Female	.50
Male	.50
Average age (years)	21
College graduate	.08
Enrolled in college	.33
Enrolled in postsecondary school	.06
Some postsecondary education	.25
High school graduate	.21
Less than high school	.07
Married	.16
Cohabiting	.12
Going steady	.34
Dating	.26
No relationship	.13
Works full-time	.46
Works part-time	.24
Unemployed	.13
Not in labor force	.17
Lives with parent	.46
Has a child	.21

MEASURES

Time 1 parenting. We factor analyzed Time 1 parenting items (reported by parents) that resulted in the following four dimensions used to operationalize parent-child relations when children were ages 12 to 18: parental warmth-support (7 items, alpha reliability = .77), democratic discipline (2 items, Pearson's correlation = .30), parental restrictiveness-supervision (7 items, alpha reliability = .67), and parental coercive control and conflict (12 items, alpha reliability = .67). The items included in each of these scales are shown in Table 2.

Time 1 child behavior. Two indicators of the child's behavior at Time 1 were included as possible mediators of the linkage between Time 1 parenting and Time 2 child outcomes. Problem behavior was measured at Time 1 by asking parents to report the occurrence of the following events during the previous year: child repeated a

grade, had behavior problems at school, was suspended or expelled from school, ran away from home, was in trouble with the police, saw a therapist for emotional or behavioral problems, was difficult to raise (parent's perception). The score is the number of events occurring in the past year. School performance was measured by parental report of the child's typical grades on a scale from 1 (mostly As) to 9 (mostly Fs). This scale was reverse-coded for the analysis so that higher scores reflect higher grades for the adolescent.

Time 2 outcomes. The well-being indicators included in this study were measured in interviews with adult children at Time 2 (items are shown in Table 3). The set of outcome measures reflects the belief that well-being is a multidimensional construct (Jessor, Donovan, & Costa, 1991; Ryff, 1989) and that family experiences may have differential effects across a varied set of indicators. Outcome measures include depressive symptoms in the past week (seven items from the Center for Epidemiological Studies Depression Scale, alpha reliability = .77), irritability/hostility (three items, alpha reliability = .78), self-esteem (three items from Rosenberg's [1965] scale, alpha reliability = .64), personal efficacy (three items from the Mastery Scale developed by Pearlin, Lieberman, Menaghan, & Mullan, 1981, alpha reliability = .53), life satisfaction (nine items, alpha reliability = .77), and risk-taking behavior (measured by the number of alcoholic drinks in the past month, binge drinking in the past month, cigarette smoking in the past month, and marijuana use in the past year). The substance use items were taken from the annual National Household Survey on Drug Abuse (Office of Applied Studies, 1998). The binge drinking, smoking, and marijuana use variables are binary (yes/no), and logistic regression was used in models with these variables. All other outcome variables are continuous, and ordinary least squares regression was used to estimate these models.

TABLE 2

Items Used to Measure Four Dimensions of Parent-Child Relations in the National Survey of Families and Households, Time 1 (parent's report, child aged 12 to 18)

Parental warmth-support (α reliability = .77)

- Frequency of having enjoyable times with child
- Number of breakfasts and dinners together over past week
- Frequency of leisure activities with child
- Frequency of working together on projects with child
- Frequency of having private talks with child
- Frequency of helping child with homework
- Frequency of parent hugging children

Democratic discipline (two items: Pearson's correlation = .30)

- Parent allows child to help set rules
- Parent praises child

Parental supervision-restrictiveness (α reliability = .67)

- Parent requires completion of homework before child can play, watch television, or go out after school
- Parent restricts amount of television child watches
- Parent restricts types of programs child watches
- Extent to which child is allowed to be at home alone
- Extent of monitoring child's whereabouts when away from home
- Child has weeknight curfew
- Child has weekend curfew

Parental conflict coercive control (α reliability = .67)

- Frequency of arguing, shouting, and difficult times with child
 - Frequency of open disagreements with child
 - Frequency with which parent yells at child
-

ANALYSIS

This research design provides a stringent test of the associations between predictor and outcome. We assess the link between parents' reports on the parent-adolescent relationship and their sons' and daughters' self reports of well-being and substance use 5 to 6 years later. Because different informants were used for the predictor and outcome measures, method variance due to using the same respondent for all measures has been removed and does not contribute to the associations found with the longitudinal data. The long measurement interval will attenuate associations over time. Thus, the analysis likely underestimates the true associations between parenting during adolescence and outcomes in young adulthood.

TABLE 3
Outcome Measures From Interview With Young Adult Child at Time 2

Depressive symptoms in past week (α reliability = .77)

Measured by seven items from the Center for Epidemiological Studies-Depression Scale (Radloff, 1977):

On how many days in the past week did you feel that you could not shake off the blues, even with help from family and friends; have trouble keeping your mind on what you were doing; feel that everything you did was an effort; sleep restlessly; feel lonely; feel sad; feel you could not get going?

Irritability-hostility (α reliability = .78)

On how many days in the past week did you feel irritable or likely to fight or argue; feel like telling someone off; feel angry or hostile for several hours at a time?

Self-esteem (α reliability = .64)

Measured by three items from Rosenberg's (1965) scale: I feel that I am a person of worth, at least on an equal basis with others. On the whole, I am satisfied with myself. I am able to do things as well as other people.

Personal efficacy (α reliability = .53)

Three items from the Mastery Scale developed by Pearlin, Lieberman, Menaghan, and Mullan (1981):

There is really no way I can solve some of the problems I have. Sometimes I feel I am being pushed around in life. I have little control over the things that happen to me.

Life-satisfaction (α reliability = .77)

Measured by nine items including overall satisfaction and satisfaction with school achievement, career prospects, financial situation, leisure time, friendships, health, love life, and physical appearance.

Risk-taking behavior

Smoked cigarettes in past month (yes/no), alcohol use in past month (number of drinks), binge drinking in past month (yes/no), marijuana use in past year (yes/no).^a

a. These substance use items are taken from the National Household Survey on Drug Abuse (Office of Applied Studies, 1998).

In addition to testing the direct effects of Time 1 parenting on Time 2 child outcomes, we explored the possibility that this linkage is mediated by the child's behavior and adjustment during adolescence. That is, parenting affects the adolescent's behavior and the adolescent's behaviors and adjustment have long-term effects on young adult outcomes. Evidence of mediation exists if (a) the independent variables (Time 1 parenting) predict the mediator (Time 1 child behavior), (b) the mediator predicts the outcome measures (Time 2 outcomes for the adult child), and (c) the direct effect of the independent variables on the outcome measures is reduced when the mediating variables are entered into the regression equation. We used hierarchical multiple regression to test the mediation hypothesis and to estimate direct and indirect effects of parenting. Control variables in the models include indicators that have the potential to affect both the predictor (parental behavior) and the outcomes (young adult well-being and substance use) and thus lead to spurious correlations between predictor and outcome. We controlled for the child's gender and age, parents' race/ethnicity, two indicators of family socioeconomic status at Time 1 (parents' educational attainment and total family income), and family structure

at Time 1. The gender of the parent interviewed at Time 1 (the primary respondent) was also controlled because mothers and fathers may differ systematically in how they describe parental behavior.

RESULTS

WELL-BEING OUTCOMES

Regression results linking the Time 1 parenting measures to the child's Time 1 problem behavior and school performance are presented in Table 4 (all variables in these models reflect parents' reports at Time 1). Results show strong associations between parenting and child outcomes in the Time 1 cross section. Parental warmth/support is associated with lower levels of child problem behaviors and better grades in school (trend level). Higher levels of conflict-coercive control predicted more problem behaviors and lower school performance. A democratic discipline style was linked to higher grades in school. A positive association was seen between restrictiveness-supervision and child problem behaviors, which suggests that parents may increase their supervision and rule setting in response to the child's behavior problems. Except for the restrictiveness-supervision effect, the results support Hypothesis 1 and are consistent with individuation theory. The results also satisfy the first condition for mediation: The independent variables are significantly related to the mediating variables. The models in Table 4 also show that levels of adolescent problem behavior were higher and school performance lower for sons and older children and in single-parent and stepparent family structures. Parents' education was positively related to adolescents' school performance.

TABLE 4
Effects of Parenting on Adolescent Problem Behavior and
School Performance: Parents' Reports From Time 1 of
the National Survey of Families and Households
(unstandardized regression coefficients)

<i>Predictor</i>	<i>Dependent Variable</i>	
	<i>Adolescent Problem Behavior</i>	<i>School Performance</i>
Parental support	-.26****	.17*
Democratic discipline	-.01	.21****
Restrictiveness-supervision	.16**	.00
Conflict-coercive control	.43****	-.56****
Child's gender (1 = male)	.32****	-.50****
Child's age	.07****	-.10***
Black	-.13	.24*
Hispanic	-.16	.10
Parent's Time 1 income (log)	-.05	.04
Parent's education	-.02	.09****
Gender of parent (male)	-.03	.02
Single-parent family at Time 1	.30****	-.21*
Stepparent family at Time 1	.50****	-.38****
R^2	.201	.189

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

The regression models predicting the young adults' psychological wellbeing are displayed in Table 5. Model 1 for each outcome shows the direct effects of Time I parenting without mediation through the child's behavior at Time 1. The most consistent finding across the set of outcomes in Model 1 is that parents' reports of conflict-coercive control at Time 1 predict lower levels of young adult well-being (child's report at Time 2). Conflict-coercive control was linked to significantly higher levels of irritable-hostile affect and to lower levels of personal efficacy, self-esteem, and life satisfaction among the young adults at Time 2 (but had no significant effect on depressive symptoms at Time 2).

Parental warmth-support predicted lower levels of depressive symptoms and, at the trend level ($p < .10$), lower levels of irritability/hostility among the young adults. A democratic parenting style was associated with higher

personal efficacy at Time 2 but was not significantly related to the other four well-being outcomes. Restrictiveness-supervision was not significantly related to any of the well-being indicators.

TABLE 5
Effect of Time 1 Parenting on Young Adult's Psychological Well-Being at Time 2
(unstandardized regression coefficients)

Predictor (parent's report, Time 1)	Dependent Variable (child's report, Time 2)									
	Depression in Past Week (Center for Epidemiological Studies— Depression Scale)		Irritability/ Hostility in Past Week		Personal Efficacy		Self-Esteem		Life Satisfaction	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Parental support	-1.17**	-.98*	-.48*	-.41	-.12	-.18	-.02	-.02	.83	.55
Democratic discipline	-.15	-.05	-.15	-.08	.30***	.28**	.00	-.01	.23	.14
Restrictiveness-supervision	.83	.77	.30	.29	-.09	-.06	.00	.01	.28	.41
Conflict-coercive control	.27	-.18	.73***	.54***	-.33***	-.22*	-.07***	-.04*	-1.39***	-.82
Child's gender (1 = male)	-1.77***	-2.15***	-.66**	-.82***	.18	.27*	-.02	-.01	.44	.90
Child's age	-.52***	-.60***	-.08	-.11	.04	.06	.00	.01	-.16	-.06
Black	.90	1.07	.64	.72	.23	.19	-.04	-.05	3.09***	2.89***
Hispanic	.91	1.03	.42	.45	.61*	.57*	.03	.02	.75	.58
Parent's Time 1 income (log)	-.45	-.41	-.13	-.12	.10	.09	.03*	.03*	.58*	.52
Parent's education	-.01	.04	-.04	-.01	.09***	.08**	.02***	.02***	-.15	-.20
Gender of parent (male)	-.71	-.69	-.11	-.09	.34*	.33*	-.03	-.04	1.32	1.29
Single parent family, Time 1	.01	-.22	-.17	-.25	-.09	-.02	-.01	.00	-.48	-.15
Stepparent family, Time 1	2.07***	1.68**	.81**	.67*	-.28	-.17	-.11**	-.09**	-1.79*	-1.23
Child problem behavior		.43		.06		-.18**		-.01		-.83**
School performance		-.47**		-.32***		.07		.03***		.38
R ²	.052	.062	.044	.054	.052	.060	.041	.048	.012	.024

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

Inspection of Model 2 for each outcome in Table 5 shows that the Time 1 child behavior indicators were linked to all five of the well-being outcomes at Time 2 (thus satisfying the second condition for mediation, that the mediator is associated with the outcome measures). Higher levels of problem behavior during adolescence predicted lower personal efficacy and lower life satisfaction in young adulthood. Higher school performance predicted fewer depressive symptoms, lower irritability/hostility, and higher self-esteem among the young adults at Time 2.

The third criterion of mediation is that the effects of the independent variables on the outcomes are reduced when the mediating variables are entered into the model. As shown in Table 5, there is consistent evidence of partial mediation of the effects associated with parental coercive control. In the four models in which coercive control predicted well-being outcomes, the size of the direct effect was reduced when the adolescent behavior indicators were entered into the model. The direct effects of conflict-coercive control remained significant in

three models, although at reduced alpha levels, and became nonsignificant in the model for life satisfaction. There is also evidence that the long-term effects of parental warmth/support were partially mediated by the Time 1 child behaviors. Entering the mediators into the model reduced the size of the effect of parental support on depressive symptoms, and its alpha level dropped to trend-level significance ($p < .10$). The trend level effect of parental support on irritability/hostility became nonsignificant when the mediators were included in the model.

Several of the control variables were associated with the well-being outcomes. Living in a stepparent family at Time 1 was linked to higher levels of depression and irritability, lower self-esteem, and at the trend level, lower life satisfaction. Parents' educational level was positively related to young adults' personal efficacy and self-esteem. Sons reported less depression and irritability than daughters did.

SUBSTANCE USE OUTCOMES

Effects of parenting and adolescent behavior on substance use in young adulthood are shown in the regression models in Table 6. The results are consistent across the four substance use indicators. Parental warmth/support and democratic discipline style in adolescence were not related to substance use in young adulthood. Higher levels of restrictiveness-supervision at Time 1 had a significant, negative effect on two of the four substance use indicators measured at Time 2 from the adult child's reports. Higher levels of parental restrictiveness-supervision were associated with lower levels of drinking and lower rates of binge drinking. Parental coercive control in the parent-adolescent relationship at Time 1 was related to significantly higher levels of cigarette smoking and binge drinking and, at the trend level, to higher levels of alcohol use and a higher probability of marijuana use.

The child's problem behavior and school performance at Time 1 were not related to any of the four substance use indicators. Thus, there is no evidence that the long-term effects of parent-adolescent relationships on young adults' substance use are mediated by the effects of parenting on the adolescents' behavior at Time 1. The long-term effects found for restrictiveness-supervision and parental coercive control are direct effects over a period of more than 5 years.

Among the control variables, consistent effects on substance use were found for gender of child, race, and parent's education. Sons reported significantly higher levels of alcohol consumption, binge drinking, and marijuana use than daughters did. African American youth reported lower levels of alcohol use, binge drinking, and cigarette smoking than White or Hispanic youth. Parents' education was positively associated with levels of substance use, including more drinks per month and a higher likelihood of binge drinking and marijuana use.

GENDER INTERACTIONS

We examined the extent to which the effects of Time 1 parenting measures on later outcomes were consistent for sons and daughters. For each model included in the analysis, we tested the interaction of child's gender with each of the four parenting dimensions in predicting psychological well-being and substance use. Thirty-six interaction terms were tested: 4 terms in each of 9 regression models (gender of child x warmth/support, democratic discipline, restrictiveness, conflict-coercive control). Only 4 of the 36 gender-interaction terms were significant ($p < .05$), an outcome that could occur by chance alone. Therefore, we conclude that the effects reported in Tables 5 and 6 do not vary with gender of child.

TABLE 6
Effect of Time 1 Parenting on Young Adult's Substance Use at Time 2 (unstandardized regression coefficients)

Predictor (parent's report, Time 1)	Dependent Variable (child's report, Time 2)							
	Number of Drinks in Past Month		Smoked Cigarettes in Past Month ^a		Binge Drinking in Past Month ^a		Used Marijuana in Past Year ^a	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Parental support	.03	.03	-.17	-.13	.06	.07	-.10	-.04
Democratic discipline	-.09	-.09	.07	.09	-.08	-.09	.05	.07
Restrictiveness-supervision	-.38****	-.38****	.09	.08	-.40****	-.42****	-.28	-.30
Conflict-coercive control	.11*	.12*	.24**	.16	.19**	.18*	.21*	.10
Child's gender (1 = male)	.74****	.75****	.21	.14	1.08****	1.08****	.74****	.66****
Child's age	.01	.01	-.04	-.06	-.04	-.05	-.15**	-.16****
Black	-.70****	-.70****	-.78**	-.74**	-.86****	-.86****	-.08	-.04
Hispanic	-.26	-.26	.12	.15	.09	.10	-.02	.01
Parent's Time 1 income (log)	.07	.07	-.06	-.05	.19*	.19*	.27**	.29**
Parent's education	.06***	.05***	.05	.06*	.06**	.05*	.10***	.11***
Gender of parent (male)	-.03	-.03	.13	.13	-.02	-.03	-.30	-.29
Single-parent family, Time 1	.10	.10	.17	.13	.05	.04	.29	.25
Stepparent family, Time 1	.21	.21	.68***	.62***	.07	.04	.38*	.29
Child problem behavior		.02		.07		.07		.12
School performance		.03		-.09		.03		-.08
R ²	.139	.140	N/A	N/A	N/A	N/A	N/A	N/A

NOTE: N/A = not available.

a. Logistic regression models.

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

DISCUSSION

Our results suggest that parents' behavior toward their adolescent children influences the well-being of those children as they move into adulthood. The most consistent finding across the five psychological well-being outcomes was that a coercive parenting style high in conflict with the adolescent was related to poorer adjustment for young adults (higher levels of irritable/hostile affect and lower levels of personal efficacy, self-esteem, and life satisfaction). There were fewer significant long-term effects on psychological well-being for the other three parenting dimensions (support, democratic discipline style, and restrictiveness-supervision). Parental support predicted lower levels of depressive symptoms and irritability among the young adults. A democratic parenting style was associated with higher personal efficacy. Overall, these results are consistent with individuation theory. Adolescents who experience greater parental support, democratic parenting, and lower levels of coercive parenting appear to be better adjusted as young adults.

The long-term effects of the parent-adolescent relationship on psychological well-being were partially mediated by developmental outcomes that occurred during the child's adolescence. Introduction of the child's problem

behavior and school performance at Time 1 into the models predicting the well-being outcomes reduced the effects of the parenting behaviors, most notably those associated with coercive parenting. In the cross section at Time 1, a coercive parental control style increased the likelihood of problematic development among teenagers (more problem behaviors, lower school performance), which influenced sons' and daughters' well-being more than 5 years later as they moved into adulthood. The findings for the well-being outcomes provide at least partial support for all four hypotheses and suggest that parenting during adolescence has direct and indirect effects on the psychological well-being of young adult children.

Our results also show that parenting during adolescence influenced young adults' drinking, smoking, and marijuana use, behaviors that may increase the risk of youth experiencing poorer health and well-being outcomes. Parental restrictiveness-supervision during adolescence was associated with lower levels of alcohol consumption and binge drinking in young adulthood. Coercive parenting during adolescence was related to higher levels on all four of the substance use indicators. These effects are consistent with parenting theory and studies of parental influence on adolescent substance use (Barber, 1997; Barber et al., 1994; Barnes & Farrell, 1992; Brown et al., 1993; Herman et al., 1997). Our results contribute to this line of inquiry by showing that parents' influence on their offspring's smoking, drinking, and marijuana use extends into the young adult years. Although previous research has also linked parental support to lower levels of substance use (Barnes & Farrell, 1992; Garber et al., 1997), we found no long-term associations between parental support and children's substance use. Parental control had more long-lasting influence on sons' and daughters' risk-taking behavior than parental support. There was no evidence of mediation in the substance use models. The measures of adolescent problem behavior and school performance were not related to young adults' substance use. Parenting at Time 1 had direct effects on the child's self-reported substance use outcomes at Time 2.

It is important to acknowledge that the regression models for the continuous variables yielded small amounts of explained variance. There are several likely reasons for this. Our models most likely represent an underestimate of the true long-term effects of parenting on youth outcomes. One reason for the low explained variance is that our study design relates parents' reports of their own behavior at Time 1 to their adult children's self-reported outcomes at Time 2. Using the child's perception of parental behavior to predict long-term outcomes would undoubtedly result in a higher level of explained variance. Any tendency on the part of parents toward a social desirability response set in the Time 1 interview would lead to underestimates of problematic parenting (e.g., coercive control) and overestimates of positive parenting (support, democratic discipline). Social desirability bias in the parental reports would attenuate the relationships between these measures and child outcomes. Social desirability bias would be less likely in child reports of parental behavior. Unfortunately, NSFH data on parenting from the child's perspective are not available at Time 1. Having different informants for the predictor and outcome variables also eliminate the contribution of method variance to the correlations between the Time 1 and Time 2 measures. This would also accentuate the relationships between the predictors and outcomes over time.

Beyond the measurement issues, it is likely that there are many sources of influence on well-being and substance use in young adulthood in addition to parent-child relationships. It would be unrealistic to expect large amounts of variance to be explained by relatively few measures of parental behavior many years earlier. For example, the current life circumstances of the young adults are not accounted for in our models. Their well-being and risk-taking behavior may be closely linked to their experiences in friendships, romantic relationships and union formation, success in school, employment experiences and economic independence, and success in pursuing their aspirations. The influence of peers is also not accounted for in our models. For example, Ary and colleagues (1999) reported that low parental involvement leads to poor parental monitoring. Low levels of monitoring lead to an increased likelihood of associating with deviant peers, which in turn leads to antisocial behaviors and drug use. Similarly, Fuligni and Eccles (1993) have shown that teenagers who do not receive attention and supervision by the parents are more likely to develop a strong peer orientation. Having measures of peer orientation at Time 1 would have strengthened the predictive power of our longitudinal models.

In summary, this research demonstrated that over a 5- to 6-year period there are significant associations between parents' reports of their support and control of adolescent children and the children's self-reported well-being and substance use outcomes. Our models provide a stringent test of these associations and likely underestimate the true magnitude of the long-term effects. Longitudinal data that include the child's perspective on parental behavior are needed to better estimate the lingering influence of family experiences on adult development.

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